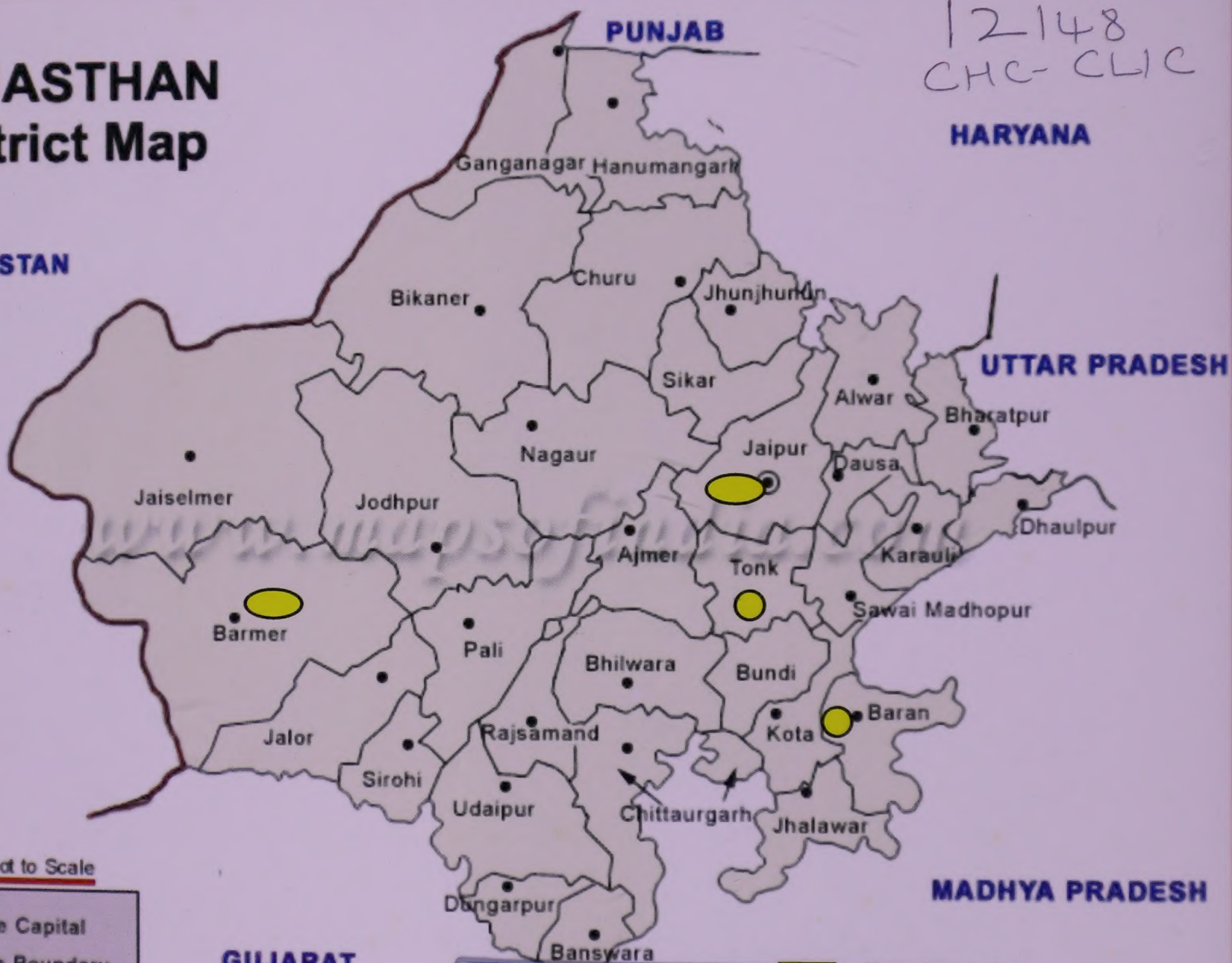


ACTION FOR DISASTER PREPAREDNESS

...EXPERIENCES OF THE PROJECT



RAJASTHAN District Map



Map not to Scale

- State Capital
- State Boundary

GUJARAT

MADHYA PRADESH

Area

Limited 2001

SOCHARA

Community Health

Library and Information Centre (CLIC)

Community Health Cell

85/2, 1st Main, Maruthi Nagar,
Madiwala, Bengaluru - 560 068.

Tel : 080 - 25531518

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www.sochara.org

Publication 2009

Sharad Joshi

Secretary, CECOEDECON

FOREWORD

The world is increasingly faced with natural and man-made disasters. While there is immense loss of life and infrastructure during disasters, the disasters also set back the process of development and the achievement of the MDGs. Equally important is the fact that disasters create situations in which there is potential of human rights violation.

Disaster management cannot remain the duty of governments only. It requires the coordinated efforts of many stakeholders, which in turn can be achieved if the institutional systems are in place.

The latest understanding on disasters as well as climate change has highlighted the fact that local communities know their environment best and they must be consulted in the development of plans that affect their lives. Also, culture determines to a significant extent how communities respond to disasters, and what solutions are acceptable to them. Therefore, meaningful community participation should be central to the disaster management planning process.

Believing that preparedness can reduce risk to natural disasters and that communities have the capacity to lead the action for preparedness, this pilot project was initiated with the support of ICCO, The Netherlands. The approach of the project has been to combine traditional knowledge with current scientific understanding. The project interventions have been of a demonstrative nature, but their success indicates that the interventions can be scaled up. The experiences of this pilot project are being shared through this book. I hope it will be of interest to all partners working towards disaster management.

ACKNOWLEDGEMENTS

Dr. Alka Awasthi

Co-Director Support

We would like to express our deep sense of gratitude for the KSS and all community members for taking leadership in innovative initiatives having uncertain outcomes. Most of all we feel privileged that they shared openly their traditional knowledge with us. The organisation is grateful to ICCO, Netherlands, for their financial support and inputs during project design.

The training and time to time support received from the Disaster Management Cell, Jaipur, is gratefully acknowledged. Thanks are also due to OCAA, Pune, and other experts for giving their quality time in developing the capacity of project staff for working on disaster management.

The organisation is thankful to all the district and block level government functionaries for extending their support through participation, and for motivating the community for taking the leadership in disaster preparedness. To the PRI members expression of gratitude is in order for their leadership in the vulnerability analysis and for taking on responsibility as Task Forces members.

We also gratefully appreciate the support extended by local NGOs. The efforts of the project leader and staff are also acknowledged as without their enthusiasm and untiring efforts the pilot would not have been possible.

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CHAPTER 1

INTRODUCTION

The world is becoming increasingly vulnerable to natural disasters. Nearly three million people worldwide may have lost their lives in the past 20 years to natural disasters such as earthquakes, droughts, floods, etc. The South Asian region has been found to be one of the most vulnerable regions with India having the largest share of disaster related deaths.

Occasional failure of rains and consequently of crops have been a known feature in India since time immemorial. Out of various natural disasters affecting the society, evidences of famines (which can be due partly to droughts or crop failure) are most common in historical writings. Hymns invoking rain in the Vedas, viz., Rigveda and Atharvaveda, mention excess of rain or drought damaging crops. In the time of Chandra Gupta Maurya a severe famine occurred in 293 B.C. in Bihar, which is said to have lasted for twelve long years. During this time it was the rajdharma which dictated that the King has the duty to take care of the subjects. The practices of this time are codified in Kautilya's Arthashastra that provides an account of the famine relief measures in ancient India. According to Kautilya the king should provide for the subject's need and food obtainable from king's own stores, or from rich subjects, or from king's friends. He also recommends encouragement of agriculture and charging additional revenue or contributions from the rich.

We get more references to famines in the writings of medieval chroniclers. The earliest reference is to the famine of 1291, severely affecting parts of Delhi and the Siwalik during the reign of Alauddin Khilji. He introduced a system of rationing during times of scarcity (Chandra, 1997). Each grocer was issued an amount of grain from government stores depending upon the population of the ward. No individual was allowed to buy more than half a man (man = ca 37.3 kg) at a time. As a consequence of these measures there was no shortage of food grains and the price of grains did not rise. Muhammad Tughlaq started relief camps during famine and brought in grain from Awadh and also advanced agricultural loans to dig wells and buy seeds and implements.

David Hardiman (1996) provides an account of the role of the mercantile classes in western India in agricultural trade and support to farmers in seventeenth and eighteenth centuries. The mercantile classes were known as Sahukars or Mahajans. They were both purchasers and providers of credit. During periods of crop loss the Sahukars provided a trickle of food grains and seeds, just enough to tide over the period till the next growing season. They even advanced loans. This stopped the farmers

¹ Chandra, S. 1997. *Medieval India, from Sultanat to the Mughals, 1206-1526*, New Delhi

² David Hardiman, 1996. Usury, Dearth and Famine in Western India, *Past & Present*, No. 152: 113-156. Oxford University Press

from migrating and ensured the livelihood to the usurers also. This system worked for 1 to 2 years of drought. But during severe famines even this 'protection' broke down and the Sahukars could not help the farmers who had to leave their villages in search of work. It is further stated that the State made no interventions in regulating prices of food grains and did not maintain grain storages.

On the other hand, for the same period Mayank Kumar (2005) has opined that in Rajputana the paucity of natural resources resulted in a peculiar relationship between the ruling aristocracy and the peasants. Studying the arhsattas (revenue records) of the Amer region, he states that the rulers maintained a strict control over the use and management of natural resources. He mentions that felling of green trees, defacing of ponds, killing livestock, illegal draining of canals, and cutting of grass from pasturelands was heavily fined. But on the other hand the taxation on farmers was so structured so as not to threaten the livelihoods of the farmers. Instead of fixing the tax on size of cultivated land, the tax was levied as a proportion of crop produced. Recognising the uncertainty of harvests in Rajputana, this system proved to be a risk sharing mechanism. The rulers even advanced loans to farmers during periods of crop loss.

These studies show that the state as well as the mercantile classes dealt with famine by providing relief after famine. They also took measures to prevent them through structured taxation, creation of irrigation facilities and controlling extraction of natural resources. The latter measures are now known to us as drought mitigation measures.

During the British period droughts led to famines and mass starvation. In the period 1850 to 1900 twenty million people lost their lives in about 20 famines due to the laissez-faire policy of the government. The government took responsibility neither for supplying food grain nor fixing prices (Dubhashi, 1992). This was on the advice of classical economists Adam Smith and JS Mill who condemned the policy of direct price control. According to their theory unlimited and unrestrained freedom of trade is the only effective measure for preventing the misery of famine. Such policies continued till the famine of 1868-69 in western provinces and the Bengal-Bihar famine of 1873-74. The recommendations of the Famine Commission of 1889, 1898 and 1901 led to a modification of the laissez-faire strategy. The government aimed at 'preventing loss of lives at any cost'. Measures taken were suspension and remission of land revenue, provision of relief work only to able bodied persons, protective irrigation, and provision of loans, etc. The famine commission also suggested extension of railways by 20,000 miles. Subsequently the Gwalior Light Railway was approved as a famine relief work (Awasthi & Sharma, 1991). All these efforts were clearly not enough and hundreds of people still perished in famines.

The period after the Second World War increasingly witnessed the articulation of human rights asserting that protection of citizens is not a charitable act but obligation of the states. The

³ Mayank Kumar. 2005. Claims on Natural Resources: Exploring the Role of Political Power in Pre-Colonial Rajasthan, India. *Conservation and Society*. 3(1): 134-149

⁴ P.R. Dubhashi, 1992. Drought and Development, *Economic and Political Weekly*, 27(13): A27-A36

Universal Declaration of Human Rights of 1948 stated clearly the duties of states and the rights of citizens. Article 25 states that everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, and housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control. Human rights protection is the responsibility of the state. The Constitution of India has also guaranteed fundamental rights to citizens and stated obligations of the state to protect the rights of the citizens.

Though protection during disasters is not explicitly stated in these documents, natural disasters create conditions in which human rights may be endangered or violated. Problems faced by persons affected by natural disasters include unequal access to assistance, discrimination in aid provision, sexual and gender based violence, loss of documentation, lack of access to basic services such as health and education, enforced relocation, unsafe or involuntary resettlement, and issues of property and livelihood restitution. Under natural disasters too the primary duty and responsibility to provide protection and assistance lies with the national authorities of the affected countries. Persons affected by natural disasters have the right to request and receive protection and assistance from their governments. The main duty bearers thus are the government and administration of the country.

The rights of women in natural disasters have been interpreted in the IASC Guidelines on Human Rights and Natural Disasters. These guidelines are informed by international human rights laws. Drawing on women's rights, the guidelines state that during disasters the state or humanitarian agencies must take appropriate action to protect women against trafficking and sexual exploitation. Special attention should be given to health needs of women including appropriate clothing, hygienic supplies and female health care provider. Women and men should be treated equally when documents are being issued; women should be issued documents in their own name. Women should have the opportunity to be consulted and to participate in planning and implementation of disaster response.

Increased frequency of natural disasters during the last few decades has resulted in the international community focussing on reducing vulnerability to disasters. The United Nations General Assembly designated the 1990s as the International Decade for Natural Disaster Reduction (IDNDR). The IDNDR called upon member states to promote the objectives of public awareness, commitment from public authorities to implement disaster reduction policies, stimulate inter-sectoral partnerships, and improve scientific knowledge. But these interventions focussed on scientific solutions only.

⁵ Awasthi, A. and Sharma, R.C. 1991. Railways and Economic Development in a Princely State: A Case Study of Gwalior light Railway, 199-1934, *The Indian Archives* 50(1):15

⁶ Protecting persons affected by natural disasters: IASC Guidelines on Human Rights and Natural Disasters, Inter Agency Standing Committee, 2006

Another major development in this period was development of the SPHERE standards. The Sphere Project was launched in 1997 by a group of humanitarian NGOs and the Red Cross and Red Crescent movement. SPHERE is a collaborative process based on two core beliefs: first that all possible steps should be taken to alleviate human suffering arising out of conflict and calamity, and second that those affected by disasters have a right to life with dignity and therefore a right to assistance. This project brought out a handbook for minimum standards for relief known as the SPHERE standards.

Later in the World Conference on Disaster Reduction in January 2005 in Kobe, Hyogo, Japan, the Framework for Action for adopted. This is called the 'Hyogo Framework of Action 2005-2015'. Accepting that disaster loss is on the rise and has grave consequences for survival and dignity of individuals, and that impacts in one region can affect risks in other regions, the plan states inter alia that communities and local authorities should be empowered to manage and reduce disaster risk by having access to the necessary information, resources and authority to implement actions for disaster risk reduction.

In India the Disaster Management Act 2005 has stressed upon mitigation and preparedness to be integrated into development planning at all levels, promoting awareness and education on disaster management, facilitating training of community on disaster preparedness with the help of local authorities and NGOs, and ensuring that PRIs officers are trained on disaster management and they maintain resources in readiness for dealing with disaster situations.

Rationale of the project

The desert region has the highest population density among deserts of the world and the livelihoods are mostly dependent on natural resources. As such the population is highly vulnerable to natural hazards. The natural hazards occurring in this region are drought, flood, hailstorm, earthquake, cyclonic winds and frost. During the last two decades the state has witnessed an increase in natural hazards, there have been 16 low rainfall years in twenty years leading to systematic degradation of ecology and people's lives. Even floods have occurred in some regions.

The high population density results in pressure on resources making them prone to overexploitation. The low social capital including low education level, widespread malnutrition, gender discrimination, still continuing social inequalities, lack of organisation, and poor leadership prevent the people from realising the full potential of the resources on which their livelihoods depend. The frequently occurring disasters further erode the coping capacity of the people because they incur huge debts during disasters that cannot be fully repaid even during years of good harvests.

The response of the government has been of relief rather than preparedness. A State Disaster Management Cell has been established and district disaster management plans are being prepared. Many departments are involved in disaster management but there is a lack of shared vision about disaster management as well as lack of coordination among the agencies. Even in drought relief activities many irregularities are observed in fodder distribution and wage work.

The tendency among the community has been of looking towards the government for providing relief. The result is that when droughts strike, the community faces shortage of drinking water, crop failure, and loss of food and fodder security. During droughts people resort to distress sale of livestock and other assets. Men of working age group migrate to nearby towns, quarries or irrigated agricultural areas in search of jobs. Women are left behind to fend for their families increasing their already high workload. When the entire family migrates, children's education and health suffer so that the effects of natural disasters are carried over to the next generation.

There is need to build a culture of disaster preparedness among the community so that they may become less vulnerable to disasters. Even after a disaster occurs the community itself can take action before the state authorities can send relief.

A needs assessment was done with the community leaders. It was clearly articulated that in order to build disaster resilient communities, they first need to be empowered so that community members can cope with the adverse effects of drought and other disasters. Therefore, need was seen for community based disaster management approach. Another suggestion was that a participatory and holistic approach with long term strategies is required to address this issue. The village level disaster preparedness plans should be intergraded in the larger development plans of the area as well as with the sector specific plans and special schemes. Coordinated efforts by different stakeholders at different levels (local, national and regional) are essential to address this issue most effectively.

Traditional practices and knowledge exist and they can be built upon to prepare and mitigate the effects of natural hazards. Some of the older farmers can still recall rain forecasting systems that can predict impending drought. The traditional water harvesting systems such as farm ponds and tankas can provide a measure of water security for drinking as well as irrigation. The cultivation of indigenous varieties and organic farming can reduce the sensitivity to rainfall shortages. The natural resource management programme of the organisation has already been promoting drought resistant crops, water harvesting systems, land care activities, seed saving and capacity building for livestock health care. The CBOs already have experience in drought relief and drought monitoring.

Activities such as institution building, and lobbying and advocacy support directly address the issues of marginalisation - the most important factor that makes the partner community vulnerable to disasters. Some of these issues important for disaster management were already being addressed in other projects.

The proposed project aimed to mainstream the issue of disaster preparedness at village level, initiate community based action for hazard risk analysis and disaster response, strengthen community- government coordination for DP (Disaster Preparedness), and to demonstrate practices for DP that were not covered in other projects.

THE PROJECT AT A GLANCE

Project title: Action for Disaster Preparedness

Project area: Rajasthan- Chaksu & Phagi blocks of Jaipur District, Malpura & Newai blocks of Tonk district, Shahbad block Baran District, and Sheo block Barmer District.

Project Period: October 2007 to December 2008

Goal: To increase the awareness, preparedness and response capacities of the local communities and local authorities to potential and recurrent natural disasters situations and to reduce the effects of these disasters by demonstrating practices for disaster preparedness and mitigation.

Specific Objective 1: To build capacity for disaster preparedness

Activities:

- 1.1 Disaster preparedness orientation of staff
- 1.2 Village awareness campaigns
- 1.3 School awareness camps
- 1.4 District level workshops for youth
- 1.5 Disaster preparedness orientation of KSS and PRI
- 1.6 Village level Hazard Risk Vulnerability Analysis
- 1.8 Formation of Task Forces
- 1.8 Training on community based initiatives for disaster preparedness

Specific Objective 2: To demonstrate good practices for disaster preparedness

Activities:

- 2.1a Collection of traditional knowledge on EWS
- 2.1b Publication of traditional EWS
- 2.2 Establishment of grain banks
- 2.3 Establishment of fodder banks
- 2.4 Construction of household and community tankas
- 2.5 Construction of cattle water troughs

Specific Objective 3: To strengthen coordination for disaster preparedness

Activities:

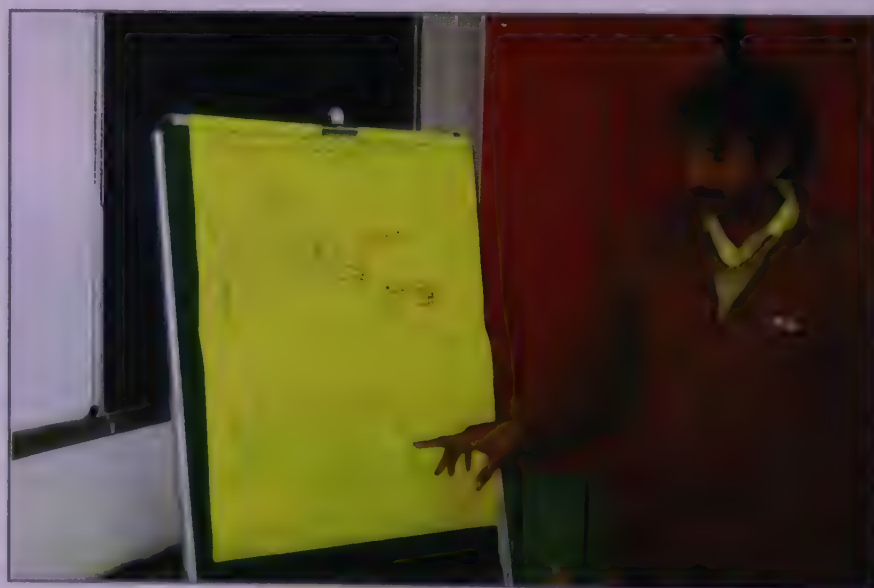
- 3.1 Media interaction
- 3.1a Visits of local media
- 3.1b State level press conference
- 3.2 Block level community-GO-NGO coordination workshops
- 3.3 State level convention for women
- 3.4 Celebration of DRR Day

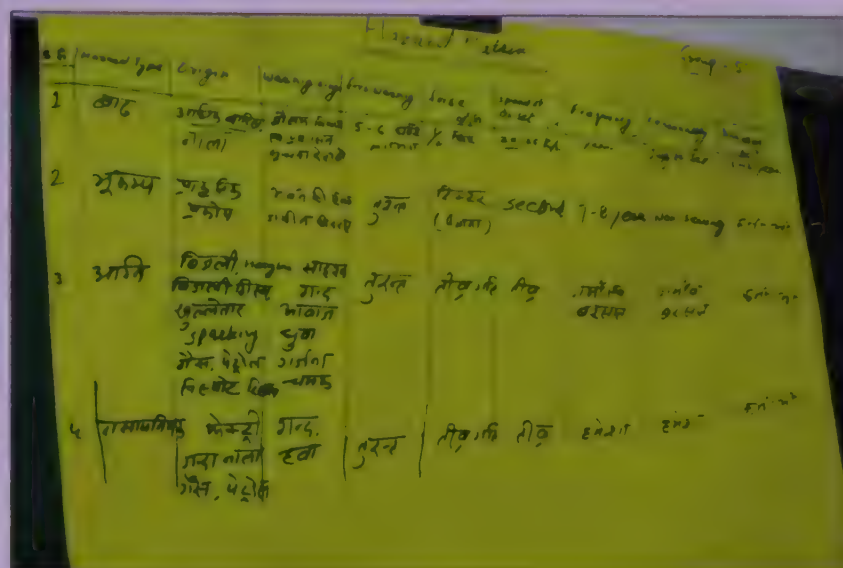
CHAPTER 2

CREATING A CULTURE OF PREPAREDNESS

The organisation has a rich experience on relief and rehabilitation programmes. The natural resource management programme took many initiatives and interventions to maintain a focus on adaptation to drought conditions. Though community in the project region have experiences about natural hazards like frost, hailstorm, floods, cold waves, and cloud burst besides the frequent droughts, these natural hazards can turn into disasters depending on the vulnerability of the population. Therefore the organization realized the importance of disaster preparedness and took initiative to shift the focus of disaster management from relief work to disaster preparedness resulting in a change of strategy. This necessitated a reorientation of staff across the different levels and programmes.

As a first step three senior staff underwent an orientation on Disaster Management organised by Oxfam (OCAA) and the Disaster Management Cell, Jaipur. Thereafter, a Staff Orientation was organised on the subject of Disaster Preparedness. Staff from different programmes and support units participated in this programme. Resource persons from the State Disaster Management Cell, OCAA, Red Cross, gender and agriculture specialists from other organisations, and senior members of the organisation addressed a range of topics from - need for community level preparedness, capacity mapping, hazard vulnerability assessment, mock drills for enhancing emergency preparedness, disaster relief, first aid, SPHERE standards, Disaster Management Act 2005, role of different government departments, gender sensitivity in disaster management, community based disaster preparedness for agriculture based livelihoods, designing information and education material for awareness creation, etc. The participatory nature of the programme resulted in a sense of ownership, interest and motivation among the staff to work on the innovative pilot project 'Action for Disaster Preparedness'.

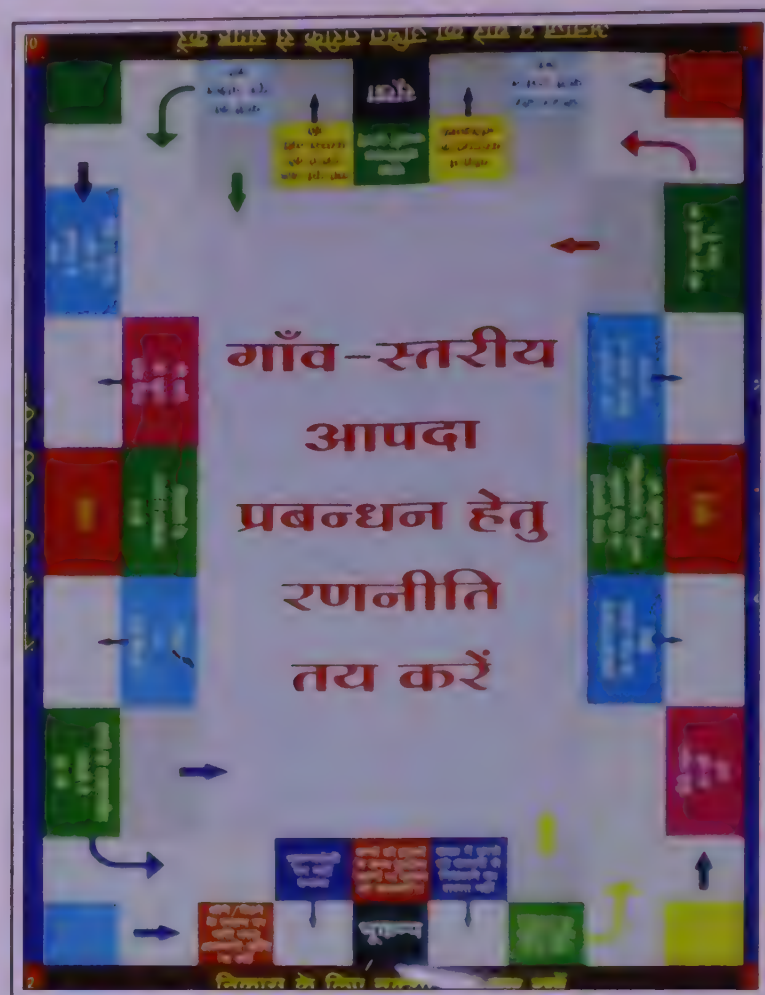




The participants discussed the project in the meetings of KSS in all the blocks of the working area. The KSS or Kisan Sewa Samiti is a block level farmers' organisation comprising members of village development committees of the block. In Sheo block of Barmer district CECOEDECON had not promoted any community based organisation before this project therefore, PRI members, members of existing community organisations and active community members were approached for discussing the project. Community welcomed the ideas and took leadership in developing strategies to operationalise the project.

The first step in implementation was to develop appropriate information and education material on disaster preparedness for reaching out to different target groups. The Disaster Management Cell, Jaipur provided booklets on drought preparedness in rural areas, and booklets showing how to respond to different emergencies such as floods, earthquakes, fire, explosions, etc. In addition more material was prepared keeping in mind the target groups in our working area. One poster was prepared showing how people can prepare for food security during disasters by forming community grain banks. Another poster depicted common disasters faced in the working area and included the message that 'disaster management is everybody's business; we should also be prepared to face disasters'. For the children, a ludo-like game was designed by the project staff. This game shows proper actions that can be taken for disasters, and also gives negative points for inappropriate actions such as:

- For floods - ignoring warning broadcasts; making houses in drainage areas
- For fires - keeping lighted lanterns near the bed while sleeping; unprotected electrical connections in the house
- For droughts - not repairing water harvesting structures before monsoons; encroaching pasturelands



It was discussed with the CBOs that we should begin with awareness camps in a few villages in each block. The CBOs prioritised vulnerable villages for awareness camps and selected the venue of the camps. It was decided to target children, youth, community adults including women, and PRI members. Some village development committees approached schools to obtain the support of teachers as well as students. Date and time of the camp was conveyed to the people two days before by house-to-house contact. Posters were pasted at public places and children and youth took out rallies. Some of the slogans heard were:

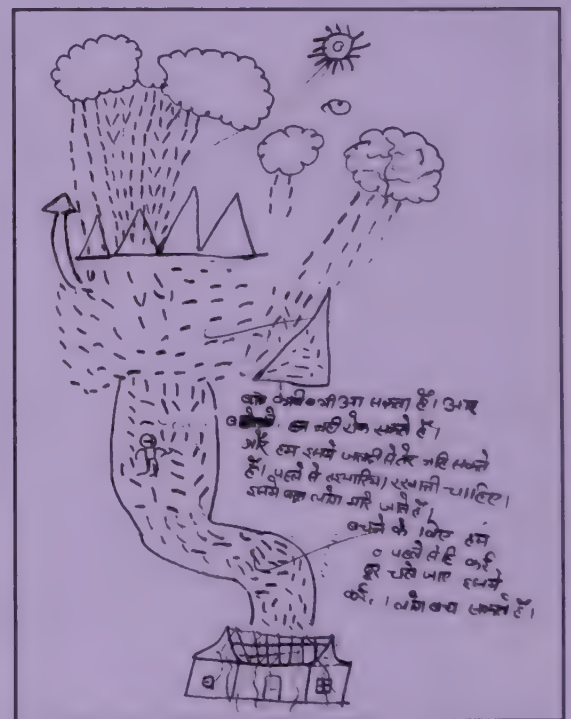
- Apda poorva taiyyari, Ham sabki jimmedari (We all are responsible for disaster preparedness)
- Apda ko jaan, Nahi to hoga pareshan (Try to understand disaster otherwise community may suffer)
- Apda ane par bhool na jaye, 1070 aur 1077 par turant bataye (When disaster occurs, don't forget to dial telephone numbers i.e. 1070 & 1077 immediately)

Cultural programme was also performed by local team which conveyed messages for community preparedness for disasters. Responding to these messages villagers related their past experiences with disasters. Some of them recounted the sharp increase in diseases during rainy season. Water stagnation in low lying areas appeared to be a problem during rainy season, especially for children. People recounted how cold waves resulted in increase in morbidity. Farmers highlighted the impact of frost on their crops and even shared some of the methods used by them to minimize the effects of frost. One elderly person recalled a fire in a fodder heap 15 years ago, and how fast action by the people stopped the fire from spreading. People also discussed their problems of shortage of water and fodder during droughts, and the hardships families had to suffer when they migrated in search

of a living. The common observation in these camps was that sudden disasters destroy infrastructure, crops, livestock, trees and water resources - the very assets on which their lives and livelihoods depended. With this came the realisation that community should plan and prepare ahead for frequently faced disasters. Some community leaders also felt that the NREGS can be used to create and repair water storages for drought mitigation.

Local daily news papers took keen interest in the activities and their coverage helped to increase the outreach of these efforts.

Children are the caretakers of the future and they are also most receptive to new ideas. Awareness camps were organised for school children. The school principals were approached and the objective of the awareness camps was discussed with them. The school teachers extended full support for organising the events. Different events were planned in different schools such as painting competition, discussion on disasters- their causes and impacts, slogan writing competition, role play for rescue methods, essay writing competitions and quiz etc. The teachers as well as parents took the lead in discussing the impacts of disasters faced in their locality. Thirty school awareness camps were organized in the project areas and sensitized about 4502 students, guardians and teachers.



Drought was the most discussed disaster in all regions except Barmer district where children focussed on floods because of the floods experienced two years ago. In Chaksu block of Jaipur District children recalled flooding of a seasonal rivulet and many depicted it in their drawings. The students of primary school mentioned that stagnation of water during rains was a problem for them because their school uniforms got soiled while crossing the pools on their way to school. Students of class VIII and above were knowledgeable about disasters and their impacts since the topic was included in their curriculum. When these children were questioned about what they can do during disasters, they gave many ideas such as - they can help the younger children and elderly persons to get out of the house during disasters, they can lift the stored food grains and take them to a safe

place. Some of the children said that a large go-down should be constructed in the village, and all families should store their fodder in this go-down so that it is not destroyed by rain and strong winds. The serial bomb blasts in Jaipur were fresh in their memory and they said that in future they will not go to Jaipur without the company of their elders, and they will not touch any object which is lying unattended. One child had noticed in the television how some wounded people had died on the way to the hospital. He suggested that in future if there are such blasts, makeshift hospitals should be arranged on the footpath itself so that medical aid can be administered at the earliest and people would not have to carry wounded persons to hospitals.

After attending a school awareness camp, Mr. Shrawan Kumar Soni of Sheo block, a bright student of eighth standard in Bharatiya Vidya Mandir Secondary School, Barmer, felt that something should be done to give advance warning of disasters to people. He participated in a state level science competition where he showed a model developed by him to predict disasters. This model is made up of easily available materials like bulbs, switches, wire, bottle, direction indicator for wind, and a tub. Using only Rs.355 he created a unit that is sensitive to humidity changes and can forecast heavy rainfall and storms. For this invention the child was awarded the first prize in the science fair and the invention was covered in detail by the local press.

Shrawan has been sensitized and inspired towards disaster preparedness. He also received inspiration and direction from the local Task Force for disaster management. Now he has dreams to become a scientist.

CECOEDECON has fostered a network of youth for active leadership in social development. Village level Youth Mandals from all over Rajasthan are integrated into block level bodies and they have demonstrated their strength for village development. Keeping this in view four district level workshops were organized in Jaipur, Tonk, Baran and Barmer districts in Rajasthan, with the purpose of sensitization of youth on reasons and consequences of disasters, their perceptions and role in mitigating the disasters. A total of 134 youth participated from the entire project region.

The youth workshops were single day events that were attended by local youth groups, district administration, KSS of the respective blocks and other local organisations such as Rotary Club and NGOs. The KSS members explained the concepts of hazards, disasters and vulnerability, and shared the hazard vulnerability analysis done by them. Exercises were given to the youth to state what youth can do for disaster preparedness as well as response. The youth depicted through drawings or role plays how they could help in emergencies. The officials of the District Administration took keen interest in the presentations by the youth, and in turn they responded by explaining various compensation schemes to the youth. They also pointed out in detail the role of different government departments in disaster management. In Barmer the CRPF representatives conducted mock drills for rescue of victims. A local NGO called SURE opined that if the schemes such as ICDS (Integrated Child Development Scheme), PDS (Public Distribution System) and MDM (Mid Day Meal) were

properly implemented, food security could be ensured during disasters. The interest and support received from the community leaders as well as government officials have motivated the youth to contribute to disaster preparedness in their community.



Women have distinct needs, especially so during disasters, but there is no platform for sharing women's views. A state level convention was planned on the theme of "Drought and Women's Perspectives" for interfacing of female community members with representatives of relevant government departments as well as researchers and media. The convention was organized in Jaipur in December 2008 and was attended by more than 60 women including PRI members from the project areas.

Mr. Joshi, Secretary, CECOEDECON welcomed the participants saying that in spite of government's numerous schemes for disaster management, women faced many hardships during disasters and hoped that the issues of women would be highlighted in the convention. The Chief Guest Dr. Pritam Pal focussed on drought. She said that drought is a slow disaster leading to drying up of rivers and food shortages. She opined that when men migrate to towns in search of jobs, women are expected to look after the needs of the family. Women spend hours to fetch water. This affects children's education because they are expected to help out with domestic chores. Women always feed others in the family and themselves eat last of all. Because of their own deteriorating health they give birth to underweight babies. Water scarcity affects hygiene and there is increase in incidence of diseases. Migration of men also contributes to spread of AIDS among women. In times of hardships frustration of family members is vented on women and more cases of domestic violence are observed during droughts.



It was also discussed that the work done by women is often under represented or not reported as work at all. It is not considered contributing to household income. Estimates of their contribution elude the government even now. It is a fact that 80% of the working people in NREGS are women and the success of NREGS in addressing women's issues is a question of

concern. Their economic and emotional burden increased tremendously during drought. The women were motivated to react, respond and find ways to make their voice reach the authorities. Women should be literate enough to understand the policies for them, the mechanism for implementation and also should identify the platform which facilitates their voices.

The women also expressed similar concerns. They added that since people were selling off their land and livestock during droughts and because of the resulting loss of equity, they could not meet their immediate needs and had to borrow from moneylenders at very high rates of interest. Under normal conditions Rajput women were not allowed to go out of their house and interact with non-family members, but under emergencies they had to go out in search of work. Increased alcoholism and domestic violence was also mentioned by them. Women mentioned that they worked diligently on the earth works in NREGS but the other men's group sat idly. When the work was measured, the measurement and payment was done jointly for all the works. As a result women ended up earning up less than what was due to them. They even said that they had to give up a day's wage just to collect their payment. When women stayed out of the house working, the instalments on loans taken by them were not repaid on time and their debts accumulated.

Dr. Kanchan Mathur of the Institute of Development Studies, Jaipur, facilitated the discussions among women. The women put forth certain demands to mitigate the problems faced by them:

- There should be a separate disaster management cell at district level for women only. This would enable the women to discuss women specific issues
- First aid kits should be provided at village level for disaster relief
- Payment for NREGS through banks is time consuming therefore, payments should be made by cards at their doorstep
- Trainings should be organised for women on non-farm livelihoods such as sewing, embroidery and other enterprises
- Block level grain and fodder banks should be established

It is evident from their demands that women want more sensitivity in addressing their needs (refer to their demand for separate DM cell for women). They are concerned about food security, and women would like to contribute to the earnings of the family through building skills for alternative livelihoods.

Reaching out to various groups through these activities helped us to understand their specific concerns, action points for future work and, most importantly, the potential that people felt they had for facing disasters. The sentiments of the community can be summed up in one of their own slogans

Apda poorva taiyyari, Ham sabki jimmedari

Realising the fact that they can face disasters by being prepared for them, the community expressed interest in discussing what initiatives can be taken up at village level. Therefore, block level trainings were organised for community based initiatives for disaster preparedness.

The trainings were aimed at youth, women and other active community members. The participants recalled disasters they had experienced in their lives such as fires, drought, earthquake, heavy rain, floods, hailstorm, frost and personal accidents. While all these disasters lead to human casualties and destruction of houses, capacity to cope with these disasters can be enhanced by better management of the means of livelihoods and food supplies. It was felt that harvesting of rainwater and regular maintenance of the structures can improve water availability in droughts and can also control floods. Participants felt that farmers were using water from deep bore-wells to grow water intensive crops. But growing drought resistant local varieties can lead to minimisation of the risk from droughts. Whatever water is available should be used judiciously in irrigation through traditional methods of micro-irrigation.

Availability of fodder is a critical factor in livelihood security and the participants discussed methods for safe storage of fodder and methods for preparing animal feed at household level. The concept of community level grain and fodder banks was also discussed. The participants felt that these banks could be useful where livestock populations are large but land holdings and/or pasturelands are small, or where there is a concentration of poor households who cannot purchase and hold enough fodder to tide over the whole period of extended disasters.

While there is no question that the community can prepare for disasters, it was also felt that the people had an important role even during disasters. When disasters strike, the state agencies take time to arrive but it is the neighbours who immediately come to the rescue of people needing help. There are many ways in which the locally available materials can help in protecting lives. They mentioned that during floods even if people did not know how to swim they could use water bottles, jerry cans, or wooden doors to keep themselves afloat. Doctors explained



how people could provide primary treatment to injured persons especially for bone fractures and head injuries.

Maintaining sanitation during disasters, especially floods was also discussed. During floods there is less amount of dry ground available and many people have to stay together. In such conditions defecating near the disaster shelter creates problems as in the Barmer floods. Therefore, the participants felt that toilets should also be constructed at a safe distance from the tents housing the affected people.

Even as households and communities discussed ways of preparing for disasters, it was felt that there is a need for strong leadership to carry forward the process of community based disaster management. The organisation has promoted various community based organisations such as Mahila Mandals, Bal Panchayats, Youth Mandals, Village Development Committees (VDCs) and the Kisan Sewa Samitis (KSS). The VDCs and KSSs are actively involved in advocacy for micro level issues and have been a vehicle for linkage of micro and macro level issues relating to agriculture, trade, food security, water policy etc. These organisations were the natural choice to take a lead in mainstreaming disaster preparedness in their regions. It was felt that since Panchayati Raj Institutions are the main actors in local level disaster management, therefore, they should also be part of the community leadership. Therefore a joint training of KSS and PRI members, along with active youth from the respective regions was planned for all blocks of the working area. The objectives of the trainings were to build the capacity of community leaders for disaster management and to identify volunteers for conducting hazard risk vulnerability analysis in the respective blocks. In each block level training about 25 persons participated including KSS and PRI members, local active youth and women.

The first task was to build their understanding of hazards and vulnerability. The participants were asked to recount recent disasters faced by them and mention those disasters that they faced successfully, and those disasters which they could not manage properly. Some participants mentioned that once a girl was sleeping inside a hut and the hut caught fire. The bada or animal shelter was also close by and that too caught fire. Since people (in Barmer district) do not tie their animals at night, they could easily free the animals by opening the gate therefore, the animals were saved. They tried to put out the fire by using the stored drinking water, but it was not enough for the task. Then the neighbours helped out by lifting buckets of sand and throwing sand over the fire. In this way the girl and the animals were saved but the house burned. They analysed the situation and came to the conclusion that the success was due to the immediate response of the neighbours, and the practise of not tying animals inside the shelter.

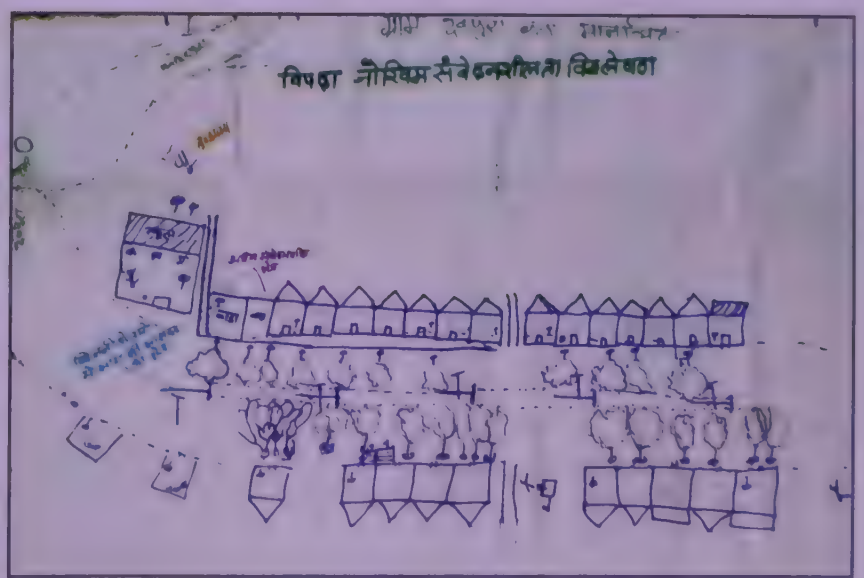


Recalling the flood in Barmer the participants explained that in their village there is a river which is flowing close by. The flow in this river is not much since the times the villagers can remember; therefore, over time people started building their houses in the dry river channel. When after heavy rainfall water in this river started to rise, some people who knew about floods left the area. But most of the people had never seen or heard about floods, they did not believe that in their desert region rainfall could be heavy enough to cause floods and they remained in their houses till the time the area got flooded. These people were then stranded on top of their houses during the floods. They had a strong belief that local deities will take care of them.

One of the participants narrated the story of his relative from a village near Sawaimadhopur. One fire started in a house and it quickly spread to the livestock shelter which was adjacent to the house. People could not even save the animals as they were tied and could not be freed easily. All the livestock burned in the fire. The owners rang up the fire brigade, but because of the narrow lanes, the vehicle could not reach the burning house and the whole house burned down. They then realised that villagers have the habit of gradually encroaching on the roads by dumping animal dung or twigs, but they have to discontinue this practice for maintaining escape routes in case of disasters.

The participants also conducted a hazard vulnerability risk assessment exercise of the building in which the training was conducted. The participants found that since the dharmshala in which the training was conducted was situated in a densely inhabited area having multi-storeyed buildings and narrow lanes, the structures were vulnerable to fire and earthquakes. The drains were shallow and would not be able to convey storm water in the event of intense rainfall. In one of the venues the drains were not covered and the participants felt this could invite health related disasters. In Newai the participants observed that the dharmshala in which their training was organised was very close to a stony hill and in the event of an earthquake large boulders could shift and hit the building.

One batch of trainees conducted the HRVA in a dhani (hamlet) called Geevli Dhani. In this dhani they found many positive aspects of disaster preparedness such as proper storage of seeds and food grains, and the lanes were wide enough for easy evacuation. But there were also indicators of vulnerability, e.g., in one of the houses the electric meter was placed right on top of the thatched roof and could easily catch fire. They also found that the whole habitation depended for water on a single well that was 1 km away from the habitation. This source of water could not be useful in case of a fire and could also lead to water scarcity for the people.



In this way the community understood how certain conditions can make people more vulnerable to disasters and they also learned to analyse situations to identify causes of vulnerability. After this the participants were asked to identify 5 most vulnerable villages in their blocks. It was interesting to note that different groups used different indicators of vulnerability such as: no link with road, concentration of poor households, unavailability of basic services such as telephone as well as health services, non-availability of grazing lands, and few drinking water sources etc. After listing the most vulnerable villages, team members were identified for conducting the HRVA in these villages.

The identified volunteers contacted the villages selected for HRVA. These volunteers visited selected villages and organized meetings to identify local volunteers for the exercise. Together, these volunteers constituted the HRVA committee for the village and spared two and half to three days time for hazard risk vulnerability analysis (HRVA). They conducted the analysis by listing commonly faced disasters, the origins of disasters, and resources available in the village. They identified the most probable sites of disasters such as low lying roads that could be vulnerable to flooding, or fodder storage areas that could be vulnerable to fires etc. They tried to identify the most vulnerable households as well as sections of populations that are vulnerable to different types of disasters. Women and children were also involved in the analysis. They contributed in a very important way to bring out the ground reality of the village. In most villages HRVA maps were drawn to show the vulnerable sites and the location of useful resources including the telephone numbers of the local relief agencies. Some of the villages painted the HRVA map on a public building so that it could be readily accessible to all. This information helped to chalk out the strategy to mitigate the disasters at community level and also to develop village disaster management plan.

After the HRVAs were done, the KSS, PRI members and others who had undergone the previous training on disaster preparedness met along with those persons who had conducted the HRVAs. A three day workshop was organised for each team to select a task force and prepare block level action plans. The objective of this training was to develop the capacities of block level leaders and form Task Force with the responsibility to make a disaster preparedness plan and implement it in their block. In the workshop HRVA documents and village disaster management plans were shared and presented to formulate an action plan for the region. Almost ten to fifteen members of Task Force in each block were selected to take on specific responsibilities in the implementation of disaster management action plan and to maintain better coordination with the government departments/ local bodies. The Task Forces were oriented on the government's disaster management system.

Government officers participated and assured the community that they would extend all possible support to Task Force members towards disaster preparedness at community level. ADM who is the nodal officer at district level gave direct input in the training and assured participants for possible cooperation and assistance from district administration. Government officers asked CECOEDCON for providing primary treatment kit to the participants, if possible so that trained people can respond immediately to disasters.



Disaster Management Act 2005 was explained to the participants highlighting the role of different departments and agencies. HRVA committees presented findings of the hazard analyses as well as the block disaster management plans. Task Force members maintained addresses, phone numbers and members' name and agreed to coordinate with different departments and agencies.

Some of the common responsibilities taken by the Task Forces are:

1. Members of the Task Force are responsible to make aware their family as well as community about disaster preparedness.
2. Members would come together monthly through a meeting at CECOEDCON office for refreshing their learning and experiences.
3. Learning regarding disaster management especially preparedness would be shared in the Gram Sabha Meetings.
4. Members would maintain phone numbers diary as well as National Cadet Core (NCC) and scout guide students would be included for the management of disasters.
5. Task forces demanded identity cards for the volunteers.
6. Members decided to organise a joint exposure tour of Task Forces in the project regions. There was a felt need to get an exposure of all departments and agencies related to disaster management.

In Shahbad block the Task Force has decided their responsibilities under the following 5 categories:

1. Coordination committee (3 members),
2. Early warning team (4 members),
3. Rescue team (4 members),
4. Primary treatment team (2 members), and
5. Food and water management team (4 members).

In Sheo block of Barmer district the composition of the Task Force has sub-teams for the following tasks:

1. Coordination and management
2. Early warnings
3. Team for temporary accommodation
4. Search and rescue
5. Primary relief team
6. Relief management
7. Relief material (food, water, treatment etc.) provision team

In Newai block of Tonk district the Task Force met the officials at block level and stated their role. The officials took a list of the Task Force members and agreed to involve them in disaster management meetings and efforts.

Task Force members are already playing a very crucial role for minimizing losses in regions by rendering their services. For instance, in the month of November 2008 the house of Mr. Meera Khan of Sargeela Par village, Sheo block, Barmer, caught fire accidentally. He informed Mr. Narna Ram Bheel, a Task Force member immediately. Mr. Bheel responded by informing fire brigade service which was near Bhadris plant (coal plant) about 12 km away from the site with the help of the phone number he had. By the time of destruction of one jhopa, the fire was controlled with the help of fire brigade and the villagers and other houses were saved from burning.

In Sheo block the Task Force keeps in touch with disaster control room at block level and district level disaster management cell. They have also built up good linkages and coordination with local government in this direction.

The capacity of the Task Force members should be strengthened through trainings and workshops so as to face future challenges in this direction. The true spirit of volunteers indicates that community based disaster management is the most important strategy to reduce the dependence on government. This reflects a positive change in attitude of the community for minimizing disasters in their region. Even after the completion of this project and withdrawal of CECOEDECON, the Task Force can continue to provide their services to the community for disaster preparedness as well as mitigation.

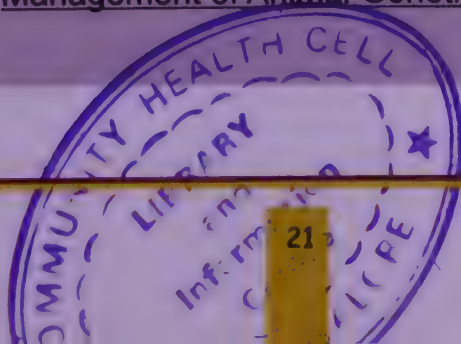
Since the project was a short duration pilot project, the initiatives were of an experimental nature. An understanding has been developed about which initiatives should be built upon and which ones would need more support. It is envisaged that the Task Forces will be provided more training to fulfil the expectations from them. They may also need some funds to undertake timely disaster management initiatives themselves. During project implementation a demand had been generated to provide kits for dealing with emergencies to the Task Forces. Some reference material may have to be developed to further spread awareness on disaster preparedness. More documentation may be needed to disseminate the experiences of this project during follow up period. It is also felt that Task Forces should be promoted in other working areas of the organisation also. Therefore, a fund called 'Fund for follow-up of disaster preparedness activities' has been created under this project for abovementioned activities.

REVIVING SAFETY NETS

Living in a highly variable climate and resource scarce area, the people have developed ingenious methods of resource management. Water is the most critical component in a desert ecosystem. In some of the driest areas of western Rajasthan there could be just 10 rainy days a year, but the people have devised methods of collecting the raindrops and managing them to meet the needs of households, livestock and agriculture for a year or more. The water harvesting systems are decentralized, managed by households or communities for the use of local people as well as nomads and passers by. Ponds and tankas are constructed even in public places and pasturelands where all passing humans, livestock and wild animals have access to the water. Water management is part of the culture of people and the water storage structures are frequently seen to be decorated with paintings. Construction of water harvesting structures is also taken up as a philanthropic gesture by the well-to-do families. Public water harvesting systems are maintained by the community. Wherever piped water supply system has been provided by the State, a decline in community ownership is seen together with a devaluation of the resource in the people's minds.

In arid areas livestock form an important livelihood asset as a source of draught power, source of liquidity, as well as innumerable animal products. Breeds suitable to the harsh conditions of water and fodder scarcity, heat, and large distances among grazing places have been evolved through hundreds of years by communities specializing in animal breeding. But some of the hardiest breeds are disappearing due to loss of populations (most pure-bred Tharparkar animals ended up on the Pakistani side of the border, ref: cited in Kohler-Rollefson, 2000), decrease in fodder production in modern crop varieties, continued crossing with improved breeds, loss of grazing grounds, replacement of draught power by tractors, break-up of social ties and discontinuing of the practice of maintaining community bulls, etc. The livestock population is declining in the project area because of these reasons as well as the fodder scarcity caused due to successive droughts. Even though farmers in Jaipur and Tonk districts still store fodder through the traditional methods, failure of crops results in lesser availability of crop residues and therefore lesser availability of fodder. During droughts the price of fodder becomes exorbitant, sometimes rising to the level of cost of food grains. Under such conditions there is a high rate of mortality of livestock, sometimes owners just abandon their cows, or they may resort to distress sale of livestock that they cannot feed.

⁷ Kohler-Rollefson, I. 2000. Management of Animal Genetic Diversity at Community level. GTZ.



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Like the animal resources, the farmers have also evolved crop varieties best suited to the existing environmental conditions. Many farmers still continue to save the seeds from the crops grown on their farms. Depending on the crop, the seeds can be kept in storage for 2 or more years, but if the seeds are not planted then they lose their viability after this period. Recurring droughts can therefore destroy the viability of stored seeds. Floods can also destroy the stored seed. Hence there is a need to establish systems of community level seed storage and exchange.

Another feature of disasters is food insecurity. During sudden disasters such as floods food stocks are destroyed and the people become dependent on external help for food supplies. Other disasters such as frost, intense rainfall, pest attack and drought slowly lead to food scarcity as household food stocks are depleted, and due to crop losses less money is available to purchase food from the market.

Although community based disaster preparedness (especially for drought in this area) has existed since ages, the systems are now breaking down due to various causes. In this context there can be two strategies for disaster preparedness, firstly, the community itself can revive the traditional systems of sharing and management of resources. Secondly, the people can demand their right to food and livelihoods from the State through vigilant monitoring of existing support schemes such as the PDS, MDM and NREGS.

The organisation has already been working with people's organisations to empower them to demand their rights from respective duty bearers. Simultaneously, promotion of traditional rainwater harvesting techniques, land management, seed storage and promotion of indigenous varieties, animal breed improvement, fodder enrichment have already been demonstrated in other projects and form part of natural resource management strategy. In this project innovative ideas were piloted for strengthening the asset base and food security in preparation for disasters. Some of the initiatives undertaken were establishment of community level grain and fodder banks, and construction of community tankas.

Establishment of grain banks

Although the government has introduced the food security schemes such as PDS and Mid Day Meal, social watch by the VDCs has shown numerous lapses in the implementation of these schemes.

CECOEDECON has promoted the concept of seed banks in the tribal area of Baran district. Observing the success of these seed banks, the community suggested that grain banks can also be established for ensuring food scarcity during droughts. When the idea was discussed in different chaupal meetings, the people saw another benefit of grain banks. They felt that grain banks could also make food grains available at affordable cost to vulnerable families in the village itself. The concept was discussed in the project villages and Village Development Committees of 12 villages submitted proposals for establishing grain banks.

A series of chaupals were organised to select the management committee and site of grain bank. In most of the places villagers authorized the VDCs to take a lead role for managing the grain bank. In some villages new members have also been added to the committee. The bank management committees are responsible for formulating rules for the transaction of business, maintaining records of the transactions, procurement of fodder, liaising with other agencies, and considering social issues for amendment of rules if needed.

One of the first tasks of the committee was to decide on the location of the grain bank. For this purpose the committees selected with consensus the household of a reliable known person. The grain has been stored in a room of the house. It was initially planned that the cost of the bank would cover cost of fodder purchased, cost of transport and cost of storage structure. But the committees have decided to store grains in sacks only and there has been no expenditure on construction of storage structures. No expenses are needed for looking after the grain because the responsibility of storage has been given to a reliable family decided by the committee. The community contributed 33% of the cost of the grain bank. In most banks the grain is already under circulation.



A total of 12 grain banks have been established through this project. One grain bank was established in Saligrampura village in Chaksu block in Jaipur district that is completely managed by women. The leader of the management committee is Smt. Shakuntala Devi Sharma who is also the Chairperson of the local savings cooperative called Rajasthani Mahila Sewa Sehkari Samiti.

Case Study: Initiative Towards Food Security

Ratanpura is a small village, comprising of 60 households with 300 persons, in Malpura block of Tonk district in Rajasthan. This village is situated on Malpura-Kekadi route and is 3km away from Indoli Gram Panchayat headquarter.

Consecutive droughts have affected the livelihoods of rural people and deteriorated natural resources in this region. Agriculture is the main occupation of majority of households. In spite of the endeavours of government and non government organizations to generate employment for the disaster affected people through relief works, people could not meet their basic needs. Keeping in view this ground reality, CECOEDECON took an initiative towards creation of awareness about community based disaster management in order to promote disaster mitigation measures. Mass awareness on disaster preparedness was generated through discussions in various platforms like, chaupal, VDC, SHG, Gram Panchayat meetings etc. It was realized that a grain bank would lessen the food scarcity faced during drought. The people of Ratanpura village showed willingness to set up community driven grain bank for ensuring food security.

As a consequence it was decided that the community would share one third amount of total unit cost as community contribution for setting up the grain bank and the rest of the cost would be supported through the project. Initially 30 households contributed Rs.300/- each and collected a total amount of Rs.9000/- as community contribution. The organisation provided Rs.18000/- and with this corpus the committee purchased 24 quintals of wheat grains. Some committees purchased grain with the entire amount to start a bank, but some of the committees were more cautious in their approach, they initially used some of this money and decided to expand slowly as they gained confidence and people accepted the system.

The Village Development Committee was authorized to manage the community grain bank and to take care of the business and its growth for benefiting marginalized people in their locality. Following rules and regulations were decided to maintain smooth functioning:

- Community grain bank has been opened for public interest especially for benefiting poor people. There will be no scope for any preferential treatment to others
- Village development committee decides responsibilities for transportation, purchasing grains and other activities
- Committee is responsible to manage transactions - both distribution and recovery
- Grain bank account will be opened in public bank
- Committee will decide rates keeping in view market fluctuations and expenses of bank
- The grain will be sold to each customer on the same rate
- There will be an upper limit of 100 kg grains to be sold to a family of 5 members at a time
- Priority will be given to the people of the same village, but neighbouring villages would be considered if surplus grain is available

The grain collected is already in circulation as people are buying the grain which is available in their own village. Initially 45 households benefited from the grain bank. Since then grain has been purchased again and a second cycle of selling has commenced. The people feel that this process of selling and replenishing stocks will also maintain the freshness of the food grains.

Local print media reporters (Dainik Bhaskar, Dainik Navjyoti, Punjab Kesari and Mahaka Bharat) visited the bank site and interacted with the people to know the dynamics of bank management, its progress and views of the local people. Wide publicity was given to the grain bank by various news agencies.

The community believes that grain banks will be a sustainable system for mitigating disaster effects and will also reduce the dependence on market which is 15 km away from the village. After the establishment of the grain bank in their village the people have realised savings of time and expenditure. This money and time can be utilized for other purposes. Moreover, quality food grain is available at cheaper rates to them. This has led to food security and has developed a sense of ownership which would continue even after the phase out of the project.

Village leaders plan that when the grain holding increases and more people start buying the grain then they can obtain a license to run the bank as a cooperative. People were optimistic about growth and development of this community driven grain bank which was totally new for them. This initiative inspired other villages in the region resulting in establishment of another grain bank in Bambori village of the same block.

Establishment of fodder banks

The state's economy is based on livestock and drought being a frequent occurrence, fodder availability is a crucial factor besides water that determines the viability of the livestock rearing systems. During droughts government provisions are made to arrange dry fodder which is sold at subsidized rates through **fodder depots** in the affected areas but these measures are not enough and fodder prices rise exorbitantly. This project experimented with community based efforts for fodder security through fodder banks.

The concept of the fodder bank was that the community should not have to depend on subsidised fodder. Rather they should be able to maintain their own stocks of fodder by purchasing fodder when prices are low and then selling it at a certain profit but below the market price during scarcity periods.

Through this project a total of ten banks were opened and are managed by farmers. Two different kinds of bank were formed. In Jaipur and Tonk Districts farmers stack the fodder in a hut shaped structure on a piece of compacted land, either on the farm or near the house. During initial discussions with community leaders in project formulation stage it was envisaged that the same method of fodder storage could be undertaken on common land leased from the Panchayat. But when fodder banks were initiated at village level, the people opted for storing fodder in rooms in the houses of committee members for a beginning. This was because they feared that accidental or intentional fires caused by anti-social elements could destroy this community resource. Later as transactions increase the committees plan to rent out a storage space for the fodder. Now one committee has already applied for Panchayat land to store the fodder at a common place.

In Shahbad block of Baran district the climate is more humid and traditionally there was no fodder storage in this region. As such the farmers keep fodder enough for 2 months only, and they burn the rest of the fodder (non-grain part of crops lying in the field). During rains people let out their livestock in the forest for grazing. But during the past 2 decades there have been severe droughts in parts of this region and farmers have experienced the novel situation of fodder scarcity. Still the people continue with their practice of burning the fodder in their fields. After discussion with community leaders it was decided to establish fodder banks in this region too. It was decided that here fodder can be collected free of cost but a permanent structure would be needed to keep it safe so that rainwater does not destroy it. Therefore, people will be motivated to keep the fodder in a go-down constructed through the project. Each fodder go-down will store fodder enough for 3 months for the livestock population of an average sized village. A committee will be formed for operating the

fodder bank. This committee will keep accounts of the amount of fodder deposited or drawn by each family. This fodder can be accessed during periods of scarcity and the fodder can be returned during good rainfall years.

With this concept 2 fodder banks were established in this region in Gadreta and Tilgawa villages. Initially financial support was provided for construction of the go-down, transportation of fodder to the go-down and fund for management of the go-down for one year, thereafter the fodder bank management committee will raise resources for the management of the bank. The fodder bank buildings comprise one big go-down and a small office for the fodder bank manager to work.



Case Study of a Fodder Bank

Shri Nathu Lal Sharma is a progressive farmer of Harbhaktpura village, which is 15 km away from Newai block headquarter, Tonk district. This village consists of 68 households, the population being 400. Here most of the people are dependent on agriculture and livestock for their livelihood. This region was severely affected by drought during the years 2000 and 2002. Shri Nathu Lal still remembers the hardships faced by the villagers at that time in arranging fodder for their livestock. To meet the demands of fodder in the area government took the initiative of establishing a Chara Depot in which both green and dry fodder was distributed to the needy. Shri Nathu Lal being a member of KSS recalls the support given by KSS and VDC in running the depot.

He recalls that people were in the habit of storing fodder individually in the past. But decreasing size of land holdings has worsened the situation of fodder scarcity. Keeping this view, people of Harbhaktpura decided to open a fodder bank for their own village and 5 other villages. A fodder management committee was constituted having 11 members. Shri Nathu is the Secretary of this committee. The other members are:

Shri Dashrath Singh, **President**

Shri Nand Kishore Meena, **Vice President**

Shri Ram Awatar Sharma, **Treasurer**

Smt. Anju Kanwar

Smt. Geeta Devi

Smt. Durga Devi

Smt. Gopal Kanwar

Smt. Kailashi

Shri Ram Narayan Sharma

Shri Bajarang Lal

The above committee is authorized to purchase and distribute fodder to the needy livestock owners as per norms of the bank. Fodder is purchased from the market when rates are low. The Committee initially purchased about 350 quintals fodder and stored it in the go downs of six different farmers of the village. The total cost of the fodder bank came to be Rs.30000 out of which the community contributed one-third of the amount.

In the year 2008 fodder scarcity was not severe due to sufficient rainfall received; but the fodder bank was found to be a boon to small and marginal farmers of the locality. Surplus fodder was also sold to the needy farmers of neighbouring blocks. Shri Nathu says that prior to this intervention farmers had to travel to other blocks for purchasing fodder but now they spared more time and money for other productive work. "Efforts will be taken for silage preparation and fodder enrichment to avail quality fodder to the farmers," he added.

The fodder bank committee has decided certain norms for operation:

- Priority would be given to the small and marginalized farmers in the village.
- Five nearby villages viz., Suriya, Pathraj, Badhpathraj, Katchariya and Shrijagpura were entitled to get the facility.
- There would be no caste or creed discrimination among beneficiaries.
- Committee is responsible to decide the retail rate of fodder and that would be comparatively cheaper than open market prices.
- A bank account would be opened for the bank.
- Secretary and treasurer would be responsible to update records and accounts.

Bank management committee is doing efforts to obtain common land from Gram Panchayat as site for fodder bank. In addition Shri Nathu and Shri Dashrath Singh have contributed one Bigha land each for fodder bank. There are a few apprehensions on the establishment of bank on common land viz., anti-social element, stray animal that may harm the fodder bank. Attention is also given to the threat of disasters. Since fire is a common threat identified in the villages, the fodder is being stored away from residential area, children/schools and electric lines and availability of water was also considered while establishing the fodder bank. The committee is planning to purchase dry fodder of pear millet and sorghum that can be kept longer.

Several visits were made by staff and facilitated formation of rules & regulations for the management of fodder bank. Vision and progress of the bank was reviewed during field visit. After detail discussion with the management committee some points emerged for its effective functioning. The management committee should conduct regular meetings to ensure that rules remain relevant to existing situations. Record keeping should be regular and transparent to avoid conflicts. The committee should frame rules for providing fodder to the community bull. Care should also be taken to provide fodder for stray cattle. If some poor families need fodder but cannot pay immediately, the committee should develop a strategy to address the needs of such families.

The fodder bank has been accepted by the people as a step for disaster preparedness at community level. The VDC and Task Force are the caretakers of the fodder bank. The efforts of CECOEDECON in this direction was appreciated by PRIs and other government officials at block and district levels. Livestock owners have experience of fodder shortage and during scarcity prices of fodder rise much beyond the paying capacity of marginalized livestock owners during droughts. Fodder banks have addressed the needs of people of this region. The Harbhaktpura VDC is operating fodder bank with full enthusiasm and in true spirit.

Strategy for enhancing feed quality:

There are two feeding strategies, one relates with lack of fodder availability and the other with lack of feed quality. During drought situation there is need to follow the strategy for maintenance of animals to ensure its survival and to maintain minimum level of production and growth. CECOEDECON promoted fodder banks to meet the demands during scarcity period. It has become possible at village level to improve quality of feed by adopting the urea treatment of straws and complete feed formulations. This method is the only chemical treatment with practical potential under field conditions. Urea is easily available and is a relatively safe chemical that is easy to store and also easy to dissolve in water. This treated straw increases milk yield by 1 litre per animal in a day (stated by CSWRI scientist and farmers observed a little change in milk production). Demonstrations of urea treatment of Mustard straw were done in some villages. Farmers have used this method and reported it to be successful so far.

A miracle for food and fodder security

Food-clothes-shelter, these are the prime needs for human beings right from the outset of human life. Which is most essential among these? Obviously it is food while in case of livestock it is fodder.

Food and fodder insecurity were identified as major issues during disasters in chaupal of Badhbaghpura village Jaipur district. The elderly people of the village revealed that they had a tradition of storing grains inside the ground by making a pit for use during disasters. But the new generation is not storing grains and fodder to prepare for disasters. They are selling crop produce directly in the markets or on farm. In order to find out a solution, community decided to establish grain and fodder banks in their village.

A six-member committee was constituted to manage each grain and fodder bank in the village. Responsibilities and other norms were decided by community. They agreed to contribute 33 percent amount of total cost incurred. Fodder was stored out side the village. The name of the bank was displayed on the wall. Minimal charges for transportation and go down were decided. Fodder and grains were regularly distributed to the poor people of the village and also to people from other villages such as Roopbas, Kareda, Kadedda, Rasoolpura, and Mal Ki Dhani. Benefits perceived by the community are as follows:

1. Grain and fodder was available locally.
2. People saved their time and money.
3. Previously they were paying additional charges for measuring food grains and other labour costs but now they are free from these burdens.
4. Previously people faced cheating for quantity and quality of the grains and fodder.
5. People were borrowing grains and fodder from money lenders but now even poor people can obtain grain and fodder on credit from these banks.
6. Women and children can obtain grains in their village on cheaper rate in comparison to open market rate.
7. If any person is not able to provide money at moment then he/she can get 10 kg grains. When money is available then it can be deposited with the bank management committee.
8. Grains are provided on borrow basis to handicapped and old people till the pension amount was not released by government department.
9. Fodder was provided at cheaper rate than market to the needy livestock owners.
10. Poor livestock owners were not in position to trace poor quality fodder in the large quantity of heap.

Construction of household tankas

Tankas are underground water storage structures that collect rainwater from circular built catchments. These structures are traditionally built by families at their homestead in western Rajasthan. Barmer district which lies in the north western region of Rajasthan is known for droughts and severe water scarcity. This is located in the heart of the Thar Desert and normally receives an annual rainfall of 150 mm. Surviving in the midst of scanty rainfall and drought, people in this area have developed rich knowledge on how to harvest and conserve the rain water through various traditional methods for drinking purpose. Local technology called tanka is available but poor people

lack the resources to construct a long lasting tanka. The ground water in this locality is brackish with high fluoride content and is unsafe for drinking. It was realized that proper harvesting and storage of rain water would serve the purpose of drinking water for humans as well as livestock. Tanka construction was taken up in Sheo block of Barmer district for the purpose of drought proofing. A total of 27 tankas have been constructed through the project.



Construction of community tankas

Families living in remote areas generally face severe water problems. Poor households cannot afford to build tankas. Therefore it was decided to construct community tankas for groups of houses. This activity was focussed at poor marginalised families. Proper site was selected where rainwater can be harvested. Care was taken to locate the tanka on common land. The position of the tanka should be such that the families who are going to use the water should not have to walk more than 100m. Care was also taken that there was no discrimination among the user households and all could access the tanka.

A total of seven community tankas were constructed and two tankas damaged by flood were repaired.

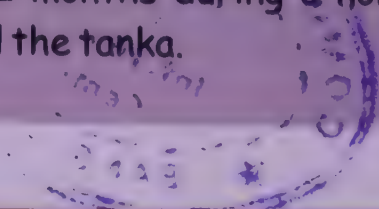
A Case Study of Community Tanka

Apada Prabandhan ka ho prachar Sarvajan ka yahi vichar

Community tanka was constructed for a dhani (hamlet) called Balani Nathon Ki Dhani, of Sheo Gram Panchayat. The residents of this dhani belong to the community 'Kalbelia Jogi'. This community is socially backward and poor and comes under SC category. Earlier these people lived in the Nagdada village of the same Panchayat Samiti. Since this village was deprived of basic facilities like water they migrated to Balani dhani which is about 1 km away from Jornada - Sheo road and 4 km. from Panchayat Samiti headquarter. This is the only road nearby for transport. People of communities like Meghwal, Mali and Rajput also reside in the neighbourhood. This dhani consists of 8 households and its population is 45 people and they live in huts. There is no electricity, water reservoir, sub health centre, school, anganwadi, etc. in this locality.

The water channels farming part of Luni River basin are seasonal. Scanty rainfall, sandy topography and shifting of sand dunes block the merging of these channels with the main river. People live in huts called jhopas. Major occupation of the people is livestock rearing, agricultural labour and even begging. Only three households fall in the category of BPL and only two children have passed the tenth standard. Nobody owns a vehicle for transportation. This dhani was badly affected during the flood of 2006.

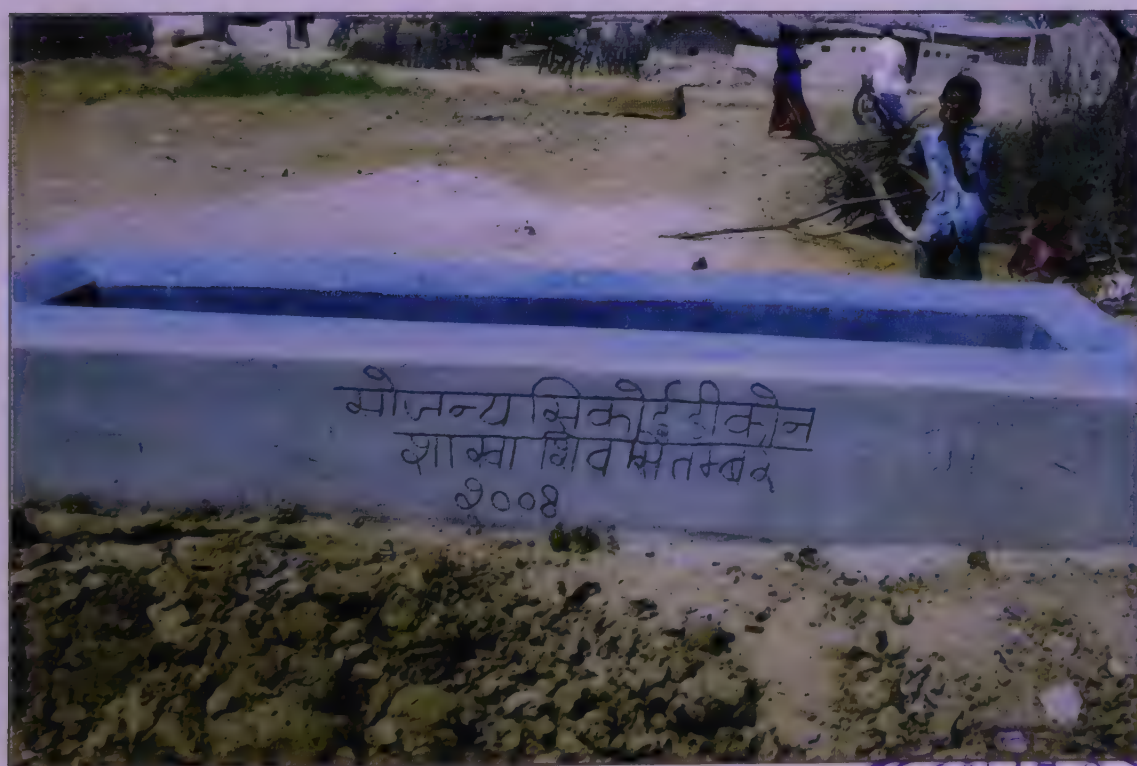
CECOEDECON staff visited this dhani and identified problems through direct interaction. After a series of meeting with people water scarcity was identified as the key problem of the people and community tanka was suggested as a solution. Villagers agreed to contribute twenty five percent of total cost of the community tanka. The remaining seventy five percent was provided by the organization as one time subsidy. The size of tanka being 12' x 12' created ample capacity to provide enough water for about 2 months during a normal rainfall year. After that water is transported through tankers to fill the tanka.



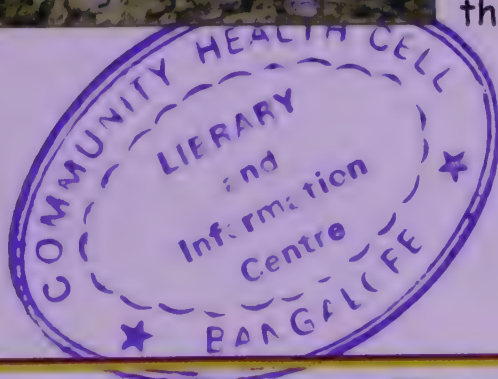
Mr. Sahib Nath of this dhani stated that he was rearing 20 goats and purchased water worth Rs. 1000/- in the last year. He had to use the crucial time for arranging water which would have been utilized for other productive purposes. This led to monetary losses and affected the education of children also. Earlier, people were dependant on a tanka which was about 2 km. away from this dhani. Women and girls used to fetch water for their family. Now they have secured water near the house. The maximum distance that women of a household have to walk to fetch water is about 100m. The spare time is devoted for other productive purposes since water is easily available for livestock and humans. The organization sensitized the users towards post construction management of the tanka and to maintain sanitation standards inside and outside of the tanka. Community became aware and developed confidence to take initiative for common issues. This indicates the real sense of community empowerment.

Construction of cattle water troughs

Water security for livestock is a major livelihood issue in the desert area. Although livestock drink water from ponds or other surface storage structures, special troughs for livestock are also constructed in villages having large population of animals. The cattle water troughs are constructed near ponds and wells so that they can be easily filled. Not all villages have these structures therefore, this traditional technology was promoted in habitations that did not have drinking water arrangements for livestock.



Cattle water troughs were constructed near water sources such as hand pumps, wells and ponds and are used to store drinking water for livestock and birds. One third of the cost was contributed by community in the form of cash/kind/material. People have decided responsibility on voluntary basis to fill up these structures and maintain it manually at the village level. A total of 29 cattle water troughs were constructed through this project.



CHAPTER 4

TRADITIONAL EARLY WARNING SYSTEMS

Environmental variability is a feature of arid areas around the world. Local communities have learned to live with this variability through keen observation of nature around them to identify signs that indicate the future state of weather or natural resources. Through these signs, indicators or early warning systems, communities have managed to reduce risk to life and livelihoods. This body of knowledge of local communities that deals with forecasting of natural events has been termed as traditional early warning system (EWS) in this work.

Communities have an extensive body of knowledge for forecasting events such as droughts, weather suitable for agriculture or livestock, for earthquakes and for irregular coastal events. In the ancient Indian text Brihat Samhita, Prasad (1994) points out that there are a large number of animal-based indicators of earthquakes. He lists these indicators, 'much tumbling of fish on to the shore line; repeated croaking of frogs, cats vigorously scratching the earth with their nails; ants shifting their eggs; snakes mating and climbing down the trees; chameleons perched on the tree tops fixing their gaze on the sky; stampede of the cows; cows look up towards the sun; domestic animals like cows and dogs reluctant to go out of the house, creeping worms betake to the tip of the grass blades; etc.

In Rajasthan the indigenous people recognize many early warning indicators of famine such as overgrowth of "Khadira" (*Acacia catechu*) trees, abnormally profuse flowering in *Prosopis cineraria*, and profuse flowering in *Diospyros melanoxylon* (Joshi & Kulhari, 1994).

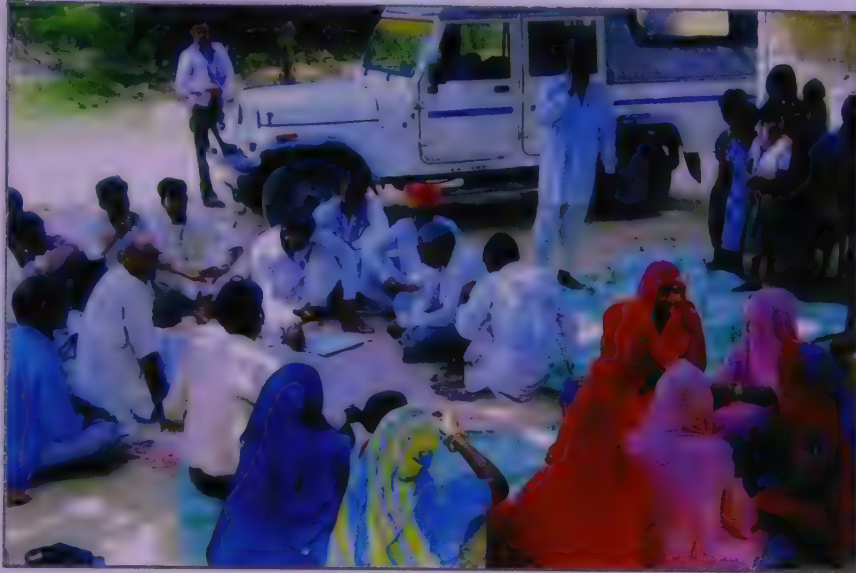
In India Panchang, an agro and socio-ecological calendar, interprets astronomical phenomena to specify the period and timing of different agricultural operations. Rather than leaving the coping mechanisms to individual ability to identify environmental stresses and respond suitably, a cultural role was evolved in the Panchang. Around 30 Panchangs or almanacs are used in the country. Rainfall predictions of some Panchangs have been compared with 50 years rainfall data of the Indian Meteorological Department by Mishra et al. (2002). The reliability levels of the predictions have been found to be from 78 to 83% in the different almanacs.

⁸ Prasad, EAV, 1994, Seismology in Brihat Samhita: Its relevance in Modern Context. Gandhian Perspectives, Tirupati: Sri Vankateswara University, Mimco.

⁹ Joshi, P., Kulhari, O.P. 1994. Plants as ecological indicators of weather. Honey Bee, 7(4): 19-20.

The Panchang is also used in the project area and the farmers have a lot of faith in this system, but it could not be studied in depth because of the extreme technical nature of the subject. There are innumerable texts in different languages including Sanskrit that are available with religious institutions and temples and a systematic study of these can reveal a wealth of knowledge.

This traditional knowledge is declining in the younger generation who rely more on scientific knowledge. Therefore, an attempt was made to document the traditional early warning systems.



Several meetings were conducted with different communities, ensuring the presence of the elderly and women. Apart from this, collection of EWS became a continuous activity as the subject was brought up in various capacity building events and meetings conducted by the organization. These interactions revealed that the people use many indicators such as animal behaviour, growth of trees, behaviour of insects, wind speed and direction, cloud formations and appearance of the sky, sun and moon, etc.

About 140 sayings and observations constituting early warnings were collected that were published in a booklet called 'kahavato me chhupyo mausam ro gyan' meaning - weather related knowledge hidden in proverbs.

Some examples of the early warnings recorded are:

- If fruits of neem tree ripen and then dry on the tree but do not fall off, then famine is indicated
- If profuse fruiting is seen in ber bushes, then productivity of jowar and bajra will be good
- If wind blows from the east in the month of Jyesth (month in Hindu lunar calendar around mid-May to mid-day June) then there will be good rainfall
- If the bird titehri lays eggs in the centre of a water body, low rainfall is indicated
- Birds bathing in the sand, frogs croaking, and ants shifting their eggs indicate that rain will fall soon
- When a comet with a tail is seen, it indicates that epidemics among humans as well as livestock will occur during that year



¹⁰ Mishra, S.K., Dubey, V.K., Pandey, R.C. 2002. Rain Forecasting in Indian Almanacs (Panchangs): A Case for making Krishi-Panchang. *Asian Agri-History* Vol. 6 (1): 29-42.

We questioned the people on how accurate these traditional early warning systems were. To this they replied that they interpreted three or more signs to get an accurate picture of future weather conditions.

Significance of EWS

Forecast of monsoon rainfall which is critical to rain-fed farming, is provided a few months before the rains commence, but the forecast is valid only at regional or district level. Farmers do not find this information useful in their specific locality. Even the 48 hours forecasts provided to the farmers are found to be unreliable and the traditional knowledge is still found relevant to plan household level livelihood strategies. In this context it is important that the mainstream scientific systems recognise and strengthen this knowledge system to provide more reliable support to the livelihoods of the people.

The communities have observed changes in the climate - more specifically, reduction in rainy period, increase in duration of summers and other such observations. Since indicators are locality specific and work within certain ranges of environmental conditions, it would be interesting to validate these EWSs to see if they still work under the changing climatic conditions and if they can then inform future weather early warning and climate adaptation.



PARTNERSHIPS FOR DISASTER MANAGEMENT

Disasters by definition denote situations that local people cannot completely cope with through their own resources. Managing disasters requires coordinated work of many agencies. This project has consciously engaged different stakeholders all through the project period. Right from awareness generation, capacity building, establishment of safety nets, hazard analysis, and preparation of action plans the PRIs, local NGOs, local government departments and media have participated actively and the fact that they have given their inputs shows their ownership of these initiatives.

The project attempted to engage with media in a very active manner, both as a strategy and as specific activity. The media is an important actor in disaster management as through their work the society can be sensitised about the problems faced by the rural community. Another important function of media as we saw it was that media persons can visit and see the work done in this project, question the community and ascertain the usefulness of the interventions. Once convinced, the media can bring the message to a large number of people.

The local print media were invited to all awareness and capacity building events. Special visits of media were also organised to the project area so that they could observe the safety nets (water storages, grain and fodder banks) promoted through this project. A total of 11 media visits were conducted in the project regions. In addition a press conference was also organised in which the community leaders conversed directly with the media.

School and village awareness have been given a lot of coverage by local print media. In Sheo block the daily **Marulahar** (February, 2008) has mentioned that school awareness camps are being organised and children are learning about causes and impacts of disasters and that children are depicting their learning through essay writing and painting competitions. This paper has highlighted that the project is creating awareness on managing natural resources and using traditional early warning systems as these activities can reduce the risk during disasters. **Rajasthan Patrika** (January 2008) has also covered the activities of children during school awareness camps and mentioned the prize winners of the competitions.

Grain and fodder banks attracted the attention of media. The visitors asked the community why the banks were being established, who will manage the banks, from where the grain/fodder was purchased, how was it transported, how will the committee ensure quality of grain or fodder, and does the committee have a license to run the grain bank, etc. In Shahbad block **Dainik Bhaskar** mentioned that construction of fodder bank is going on at war footing in the village Gadreta. The villagers have taken 3 days to do an analysis of the vulnerable villages; they have counted the number of families in the village and identified scarcity of fodder as a major concern in this village. The paper further

mentions details about the management committee. **Dainik Navjoti** (Dec 2000) has stated that the grain bank is a boon for villagers and it will provide relief to them during famines. **Dainik Bhaskar** has also described a grain bank formed in Phagi block. In Chaksu block both **Patrika** and **Dainik Bhaskar** (daily newspapers) have covered a grain bank being run exclusively by women and they have described the whole process of management. **The Hindu** has mentioned that conventional concepts of food grain and fodder banks have been revived. The newspaper **Jalte Deep** has stated that the construction of tankas, both household and community level, have reduced the dependence of people on government. In Malpura block the local media visited the fodder bank and interacted with villagers and staff and asked about operational aspects of the grain bank and its impacts. The committee was asked whether it had a license to operate a grain bank. People replied that they have a vision to expand the activity so that these banks can cater to other villages also. When this bank business would expand then a separate go down will be required along with license.



In the youth workshops the media has highlighted the participation of government agencies and local NGOs. In Sheo block **Dainik Bhaskar** (November 2008) has mentioned that youth from the Nehru Yuva Kendra have learned about the Disaster Management Act. The government departments have motivated the youth to play a major role in disaster management by coordinating with all agencies, and especially to ensure food security through ensuring outreach of PDS, MDM etc.

A women's convention was organised on the subject of 'Drought and Women's Perspectives'. The electronic media **Jagran Yahoo News** covered the event with the headline 'Women are Furious'. It stated that women face numerous problems during droughts such as domestic violence, sexual crimes, shortage of food grain, fodder, water and fuel, and they are angry because of lack of appropriate plans to manage the disasters.

The Task Forces received maximum coverage. Their role was appreciated in all the community-GO-NGO workshops. More specifically, **Dainik Bhaskar** (December 2008) noted that the Task Force presented an analysis of vulnerable villages in the block and also presented their action plans in front of the government departments. **The Hindustan Times** (January 2009) has stated that the Task Forces have been formed to deal with any situation of crisis. The volunteers have been trained to warn the communities about any calamity and to suggest measures to minimize impacts of disasters. **The Hindu** (January 2009) has stated that an important action taken by this project is the formation of Task Forces comprising volunteers for preparing disaster management plans involving sensitive villages. It further states that this lays emphasis on people's participation to minimize loss of lives and property, and also reduces the dependence on the official machinery in accordance with the Disaster Management Act 2005.

From the Phagi block **Dainik Bhaskar** (November 2008) has written that in village Dosra Khurd the villagers have done a vulnerability and risk analysis; they found that the narrow lanes among houses can pose a hindrance to movement of fire brigade vehicles, hence they are clearing these lanes to widen them.

During the celebration of the Disaster Risk Reduction Day the newspapers **Jalte Deep**, **Jaipur Mahanagar Times**, **Dainik Bhaskar** and **Mehka Bharat** have written about the significance of the work done under the NREGS in drought mitigation.

State level Press Conference

A press conference was organized on 23rd January, 2009 to share the experiences of the project as well as the community based initiatives taken for disaster preparedness with the media. About 25 participants attended the conference which included media personnel, staff, representatives of Task Forces, KSS. The representative of (women's cooperative) from the six blocks where the project has been implemented. The media personnel included representatives from **Dainik Bhaskar**, **Rajasthan Patrika**, **ETV**, **BTV**, **Evening Plus**, **Seema Sandesh**, **Daily News**, **Patrika TV** and **Doordarshan**.

The community representatives explained about the community based interventions like Task Force, tanka construction, grain bank, fodder bank and the HRVA (Hazard Risk Vulnerability Analysis) conducted in their villages. The representative of **Rajasthani Mahila Sehkari Samiti** highlighted the issues concerned with disasters from women's perspective. Media personnel interviewed staff and representatives of Task Forces and asked questions about disaster preparedness at community level.

Dr. Alka Awasthi, Deputy Director, explained the highlights of the project - its objective, activities undertaken, new initiatives, outcomes and emphasized the importance of community based disaster preparedness. According to Dr. Manoj K Tiwari, Project Head, people used to rely on government for relief and support at the time of disaster and blamed it for the delay in relief measures. It was realized that if awareness about disaster is created among the community, they could prepare themselves and take initiatives before the actual occurrence of disaster. We had traditional warning systems and coping mechanisms which need to be revived for better preparedness. Dr. Tiwari also listed out the gaps identified in disaster management at state level. From time immemorial, community possesses some indigenous methods to confront disasters. They have their own preparedness mechanisms and these mechanisms differ from locality to locality. So EWS should be recognised through policy interventions. Lack of empowerment of Panchayati Raj Institutions and low emphasis on community based disaster preparedness is the



shortcomings at government policy level. Local authority (Block) can be involved in preparing community level plan. In this way local development issues can also be integrated into the plans at higher levels. Nobody can understand local opportunities and threats better than community themselves. The news regarding the press conference and project was published in both Hindi and English newspapers.

The press took interest in the role of community in disaster preparedness. They wanted to know if we had done something new in this project or were we reviving older traditions. It was clarified that on the one hand traditional coping and mitigation strategies were revived in this project, and on the other hand the new activity was capacity building of community for disaster preparedness and coordination with the government for disaster management. The press coverage increased the outreach of the initiatives of the project and subsequently many government officials and NGO representatives appreciated the work of the organisation and made queries related to the project.

The media has been able to demystify disaster management, and has given the message that small local initiatives taken by rural communities have the potential to decrease risk from environmental disasters. In this way the media has helped in creating a widespread awareness on the need of disaster preparedness. The work of the Task Forces has been given wide coverage and confidence was shown in the ability of the TFs to lead the disaster management process in their regions. These actions have provided a positive feedback to the community and have enhanced their confidence.

Block level Community-GO-NGO coordination workshops

One of the main objectives of this project was to strengthen the coordination of community with various government departments and other local agencies for disaster management. For this purpose Community-GO-NGO coordination workshops were organised in all the blocks of the working area. A total of 239 persons participated in the 6 blocks.

In Sheo block officials from the district administration, local NGOs, Task Force members, PRI members, School Development and Management Committee, and NCC (national cadet core) participated. The Disaster Management Act 2005 was discussed and the role of different agencies was explained by the district administration. The emphasis was on managing local resources for timely disaster response like maintaining camel carts and other transport vehicles. On the preparedness side there was emphasis on proper management of water sources.



In Chaksu block the KSS presented their analysis of vulnerability in the block and the detailed HRVA conducted in 5 villages. They also explained the roles taken by the Task Force for disaster management. In this workshop the participants questioned the Forest Department representative that when a peacock had fallen in the well and they had requested the department to help, why did the department not cooperate. To this a member of another NGO replied that as citizen's every person has some responsibilities; the people were there on the site, they themselves should have taken action to save the peacock before waiting for government to take action. The representative of the Women and Child Department raised the issue that in all district level planning meetings their department was not given enough space.

In Malpura block 8 government officials, 10 Task Force members, KSS, members of Youth Mandal and Bal Panchayat members participated in the workshop. The BDO (Block Development Officer) said that information of disasters should be given immediately to the concerned department and the injured should be admitted to hospitals. The KSS Chairperson and Task Force member Mr. Jagdish Narayan Sharma described how the Task Force had listed and prioritised disasters experienced in their region, and how they had conducted HRVA in their block. He pointed out a few precautions to be taken during disasters e.g., we should maintain the contact numbers of relief departments for providing information quickly, we should not tie animals under trees during storms, we should discontinue the practise of keeping typhoid patients in a dark room, instead we should take them to a doctor immediately.

In Newai block officials of the Nagar Palika, Public Health Engineering Department, Education Extension Department, Police, and Child Development departments participated in the workshop. Shri Madan Lal Sharma, KSS and Task Force member presented his vulnerability analysis of schools in the Newai block. In village Bhataria the school has 74 students and 2 teachers. The school is adjacent to a talab and the compound wall is broken due to which children may fall into the talab (pond). In Banasthali, an electric line passes through the school compound. In village Bharadi - the school building is unsafe as the roof leaks during rains and there are cracks in the walls. In Ajitpura the school playground is full of puddles during rains and a transformer is located in the puddle. It poses danger of electrification. Other participants pointed out that we should identify people who can swim and we should arrange for a boat to be used during floods. A first aid box should be maintained at village level. Another participant pointed out that they should do not store fodder right next to the house; during last diwali there have been fire incidents in 10 villages due to burning of fodder by firecrackers. It was also stated that children should not be allowed to swim in ponds.

In Phagi block the representative of the Medical Health Department appreciated the efforts of the organisation in motivating the people to prepare for disasters. He further stated that even the health department does not have plans for disaster preparedness apart from holding camps for seasonal diseases.

Celebration of Disaster Risk Reduction Day (DRR Day)

Celebration of the International Day for Disaster Risk Reduction started during the 1990s when the UN General Assembly decided to designate the second Wednesday of October with the purpose of bringing together stakeholders to strengthen coordination for disaster risk reduction. After the completion of the decade for risk reduction, in the year 2001 the Assembly decided to continue observing the DRR day. Different countries also celebrate their National DRR days.

For the year 2008 the international theme was 'Hospitals safe from disasters'. However, upon discussion with the community, it was decided the day would be celebrated by a joint meeting of government representatives, research institutions, PRIs and the Task Forces to deliberate upon the theme 'Livelihoods and Disaster Preparedness'. The DRR Day was celebrated on the 13th of October 2008. A total of 86 persons participated in this event.

In his inaugural speech Dr. Surjit Singh, Director, Institute of Development Studies stated that weather forecasting at micro level is not reliable. He pointed out that information regarding weather did not reach the common people and insisted on a change in the attitude of concerned officials. He also said that there is a delay in relief measures of the government and emphasized the importance of disaster preparedness from the grassroots level. He said that Task Forces should be created at village and Panchayat level. He highlighted the importance of contingency planning and rehearsal of disaster response for better results. He said that promotion of non-farm livelihoods and creation of awareness about crop and livestock insurance would go a long way in risk reduction.

Mr. Sita Ram Gupta from the Centre of Disaster Management spoke on 'NREGA as an Initiative towards Drought Mitigation through Employment Guarantee and Productive Assets'. He said that NREGA is an important rights based instrument through which all adults willing to do unskilled labour could demand employment for 100 days when they were not employed in other works. The scheme does not distinguish between SC, ST, BPL and APL. A significant feature is that the act provides employment simultaneously creating community assets for drought mitigation. He asked the community to make sure that all water harvesting and land management works needed for this purpose in their village are included in the works. The community members participated actively in the discussion and posed several questions regarding the implementation of NREGA. Some of the participants raised the demand for including construction of houses under this scheme. Mr. Gupta pointed out that if construction of private houses is included, the emphasis would be shifted from community works and disaster mitigation.

Mr. Paul, Director, CECOEDECON, shared the experiences of the organisation in disaster management. He emphasised that strategies for drought mitigation should be developed at the community level and should be integrated with existing programmes. Efforts should be made to ensure proper coordination among different stakeholders. He also stressed upon the need to look into the needs of the most marginalised people especially the handicapped, women and children during disasters.

Dr. M.S. Rathore, Professor, Institute for Development Studies, facilitated a discussion among the Task Groups on the work done by the groups. Members of the Task Force from Phagi block explained how they had conducted the HRVA and on the basis of their findings they had identified land and water management works to minimize the risk from droughts as well as heavy rainfalls. They described how one farmer in their village had constructed a bund on his field and they feared that this bund would block the flow of rainwater and flood the nearby residential area. They stated that the Task Force had tried to convince the farmer to pull down this threatening bund, but when he did not listen they contacted the Administration and the bund was removed. From Malpura block the Task Force members shared how they had identified vulnerable villages in their block and how they had motivated people to establish grain banks. The Task Force members of Sheo Block, Barmer described how they had helped the people affected by thunderstorm in the area to get compensation. The representatives of Shahbad Task Force also stated that they had demanded compensation for 68 families who experienced destruction of crops due to flooding. The Task Force of Newai Block conducted an animal health and vaccination camp to control seasonal diseases among the livestock. The participants from various blocks pointed out that better coverage of crop and livestock insurance schemes would go a long way in disaster risk reduction.

Mr. Sunda Ram Verma, a well known farmer and innovator, and winner of the Dalmiya prize shared his knowledge on indigenous techniques to mitigate drought. The farmers showed interest in the drought resistant crops shown by Mr. Sunda Ram.

This event brought together representatives of state administration, NGO, research institution, PRIs and Task Forces on a common platform and helped them to understand each others work as well as constraints faced by different stakeholders.

Coordination with Government agencies

Coordination with the government for disaster management has been the major focus of this project right from the inception. Three staff and some community members took training on community based disaster management at HCM RIPA, Jaipur. Major emphasis was given on basics and fundamental principle of community based disaster management, Disaster Management Act 2005, rescue measures, norms and provisions for disaster management, criteria for disaster declaration, etc. Practical exercises were held on rescue operations and preparedness of the disasters.

The organisation has maintained continuous contact with the Centre for Disaster Management, Jaipur for the awareness campaigns, and for the capacity building of the organisation's staff. The Deputy Director, Natural Resource Management Programme, also participated and gave her inputs in the training of district level officials for the purpose of development of District Disaster Management Plans.

During the project period improved coordination of Task Force members with block level administration was seen as in the case of Sheo and Shahbad blocks where the TFs have demanded disaster compensation for affected families.

The block level government departments participated actively in the community-GO-NGO workshops and clarified their roles. They also acknowledged the role of community based organisations viz., Task Forces in disaster management and gave their assurance to invite them in district and block level meetings. Even government departments were seen to raise issues of coordination among them. In this way both community and government departments could be seen reaching out to each other for the common objective of disaster management. Providing more such opportunities can strengthen these stakeholders confidence in each other and enhance coordination among them.



SUMMING UP

The goal of the project was to increase the awareness, preparedness and response capacities of the local communities and local authorities to potential and recurrent natural disaster situations and to reduce the effects of these disasters by demonstrating practices for disaster preparedness and mitigation. The specific objectives were: to build capacity for disaster preparedness; to demonstrate good practices for DP; and to strengthen coordination for DP.

To achieve these objectives the project focused on awareness generation in selected villages and schools. Youth and women were engaged in specific events to sensitise them about disaster preparedness and to identify their concerns. Block and village level leaders were oriented on disaster and vulnerability concepts and on conducting vulnerability analysis of their respective blocks. Task Forces were formed to perform various functions relating to disaster management, including awareness generation on disaster preparedness.

The Task Forces (which included the PRI members) also took up the responsibility of coordination with all local agencies. Various platforms were provided for the community to interact with the government departments, research agencies, NGOs and media.

Community members were oriented on community based initiatives for disaster preparedness such as water management, promotion of drought resistant crop varieties, fodder, grain and seed management for drought mitigation, community level action for disasters such as accidents, floods and fire etc. Certain good practices for disaster preparedness were also demonstrated such as establishment of community grain and fodder banks and community water sources.

At the organisational level efforts were made to build the capacity of staff of different programmes for disaster management. A continuous dialogue was maintained with the state level Disaster Management Cell for their expert input, as well as for proving the organisation's input into the on-going processes of formulation of disaster management plans.

Learning

1. Children and youth have shown keen interest in disaster management and they could also convince their family and elders, therefore, these are important agents for inculcating a culture of disaster preparedness in society.
2. The importance of the dying wisdom of traditional early warning systems has been realized by the younger generation too. Through further documentation and validation, this knowledge can inform the formal early warning system.

3. During the project period the safety nets established viz., tankas, food grain and fodder banks, have been found to be useful by the community, but further follow-up during environmental disasters will prove beyond doubt the utility of these safety nets.
4. Different stakeholders have accepted that prior management of natural resources can reduce the risk from environmental disasters.
5. Community-GO-NGO workshops have proved to be a good platform for coordination among different stakeholders.
6. Even though the government departments have appreciated the community efforts in preparedness, and they have also participated in discussions about the Disaster Management Act 2005, the departments have expressed helplessness to do anything further because the rules for operationalising the Act have still not been formulated.
7. PRIs who are important actors in local level disaster management have shown interest in drawing disaster management action plans, in conducting hazard and vulnerability analysis, and in sensitizing the community for disaster preparedness. Therefore, capacity building of PRIs should be taken up at Zila Parishad, Panchayat Samiti and Gram Panchayat levels.
8. The community played an important part in this project right from identifying needs, designing activities, implementing and monitoring of all project interventions leading to ownership of the whole process.

Challenges

1. As mentioned above the block level officials gave verbal recognition to the Task Forces but the TFs have not been formally integrated into the block and district level disaster management systems. In future if the Government does not converge with parallel efforts from their side to recognise and support Panchayat and village level leadership, then the efforts of this project can go waste.
2. The communities and PRIs have not been involved in the formulation of the DM Act and even now both PRIs and NGOs only have a role in awareness building. They should be involved regularly in the disaster management system as well as in the District Disaster Management Task Force.
3. Initially superstitions, lack of education and dependence on government posed major constraints for the adoption of disaster preparedness initiatives at community level. People were habitual to relief assistance from the government during and after disasters but this project focused on preparedness of communities towards minimizing losses of property and lives.
4. In the Barmer area eliciting women's participation was difficult because of the existing gender discrimination. It was easier in other project areas where the organization had been working with the community for more than 6 years.
5. Social disturbances, elections, and necessity of attending to seasonal livelihood activities - these factors slowed down the involvement of the community in this short-term pilot project.

Achievements

There was a paradigm shift in the organisation's disaster management approach. Major emphasis was on preparedness and mitigation measures for disasters rather than on providing relief after the occurrence of disaster. The findings and successful experiences might be useful to the policy makers and researchers for developing model for different areas. The revival of traditional knowledge and mitigation measures for various hazards/ disasters may inspire other community in other areas to replicate these initiatives. The findings of this project may also be useful to other civil society organizations to internalize disaster management in the development plans. The media has given adequate space to the concerns and actions of the community.

The project interventions have contributed to the aspirations of the Disaster Management Act 2005 through awareness generation on disaster management, building capacity of community based organisations and PRI members on disaster management, and enhancing coordination among community and government.

The Road Ahead

Since this was a pilot project many of the awareness activities and demonstrations of safety nets could be taken up in a small number of villages. But these activities have shown their importance in creating a culture of preparedness and coordination among the different stakeholders. Such awareness activities should be taken up in more villages and schools. The committees responsible for management of grain and fodder banks may need further handholding for up-scaling these efforts. The Task Forces should be further strengthened by trainings on disaster response, provision of kits for immediate response to emergencies, and formal recognition and integration at district level. The capacity building of PRIs should be taken up in other working areas of the organisation also.

Continuous efforts would be made by the organisation to keep pace with and converge with the state level efforts for disaster management.

The experiences of this project have highlighted certain issues that need to be addressed at policy level:

- Direct involvement of community representatives and PRI members in disaster management in village and Panchayat level planning
- Institutionalise disaster risk reduction in schools
- Create a gender sensitive environment among institutions dealing with disaster management so that women can participate effectively in DM planning and monitoring
- Traditional weather early warning systems must be taken note of and further strengthened by the formal systems
- Disaster preparedness should be mainstreamed in local level development planning
- Improvement in the crop insurance system, better coverage of livestock insurance schemes and better penetration of life insurance in rural areas for the purpose of disaster risk transfer

The organisation along with the community based organisations will continue to advocate for inclusion of above issues into relevant policies.

LIST OF ABBREVIATIONS

ADM	Additional District Magistrate
AIDS	Acquired Immune Deficiency Syndrome
APL	Above Poverty Line
BDO	Block Development Officer
BPL	Below Poverty Line
BTv	Bhaskar Tele Vision
CBOs	Community Based Organisations
CBDM	Community Based Disaster Management
CDM	Centre for Disaster Management
CECOEDECON	Centre for Community Economics and Development Consultants Society
CRPF	Central Reserve Police Force
CSWRI	Central Sheep and Wool Research Institute
DM	Disaster Management
DP	Disaster Preparedness
DRR	Disaster Risk Reduction
EWS	Early Warning Systems
GO	Government Organisation
HCM-RIPA	Harish Chandra Mathur - Rajasthan State Institute of Public Administration
HRVA	Hazard Risk Vulnerability Analysis
ICDS	Integrated Child Development Scheme
IDNDR	International Decade for Natural Disaster Reduction
KSS	Kisan Seva Samiti
MDM	Mid Day Meal
NCC	National Cadet Core
NGO	Non-Government Organisation
NREGA	National Rural Employment Guarantee Act
NREGS	National Rural Employment Guarantee Scheme
NRM	Natural Resource Management
PDS	Public Distribution System
PRIs	Panchayati Raj Institutions
SC	Scheduled Caste
SHG	Self Help Group
ST	Scheduled Tribe
SURE	Society to Uplift Rural Economy
TF	Task Force
VDC	Village Development Committee

Centre for Community Economics and Development Consultants Society

CECOEDECON (Centre for Community Economics and Development Consultants society) is a non profit organization, established in 1982. It is a Jaipur based organization working in five states across the country and in 10 districts of Rajasthan.

Cecoedecon's Mission: To facilitate the processes of empowerment of partner communities' dalits, indigenous people, the landless, small and marginal farmers, deprived women and children through both direct and indirect interventions, so that they are able to take action independently and effectively to secure their rights for their long-term well being.

